COMMUNITY PHARMACISTS' PATIENT COUNSELLING IN TASMANIA: TOWARDS PATIENT-ORIENTED CARE

by

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ABSTRACT

Pharmaceutical care is the new philosophy and mission of the pharmacy profession which is responsive and relevant to the changing health care priorities and problems associated with drug use in the 1990s. It is expected that this patient-oriented practice will enhance the contribution of the profession to positive health outcomes. However, the adoption of this ideal practice has been observed to be more consistent at the institutional level, rather than at the community setting. Numerous factors inherent to the community setting, hindering its wider implementation, are implicated in the literature. Of the major activities performed under pharmaceutical care, pharmacists were found to perform poorly in roles requiring active interaction with patients, particularly patient counselling.

It was revealed in several studies such as a recent North American review, that there had been no substantial improvement in the quantity and relative quality of pharmacists' patient communication during the past 25 years. This grim assessment of pharmacists' performance in patient counselling has become a paradox in view of the clinical orientation in pharmacy education, government support and other reinforcing features of the community practice setting in Western countries. While this concern has been repeatedly addressed by various sectors in the profession through practice and education interventions, the re-examination of current philosophical and methodological issues in pharmacy practice research has been recently advocated and the consideration of their alternatives suggested in order to ascertain the real issues confronting pharmacists' counselling practice.

The main objectives of the present work are (1) to develop a research methodology which will help generate a better understanding of the subjective and contextual aspects of community pharmacists' patient counselling; (2) to design a specific educational intervention and its workplace evaluation based on the findings of training needs assessment and contextual analysis and (3) to identify the factors which affect the application of learning to the workplace within the practice context of community pharmacists in Tasmania..

Preceded by a review of the social aspects of drug therapy in health care and the current state of pharmacists' patient counselling, this work critically examines and evaluates paradigms, approaches and methods on the basis of their appropriateness and applicability to current issues affecting pharmacists' patient counselling. From this analysis, a research framework and its methodology were designed and used in conducting training needs assessment and situational analysis covering some general and specific aspects of patient counselling by community pharmacists in Tasmania, particularly the counselling of non-insulin dependent diabetes mellitus (NIDDM) patients. A combination of methods, mostly qualitative, were used to gather pertinent data from the perspectives and experiences of community pharmacists, NIDDM patients and key health professionals.

Guided by a system for developing continuing pharmacy education (CPE development system) designed by the author in a previous work, findings from these studies were subsequently utilised in the development, implementation and evaluation of a training program entitled "A Training Program in NIDDM Patient Counselling for Community Pharmacists". The program has both diabetes knowledge and counselling skill components, was multi-disciplinary in approach and employed various learning methods, including the microcounselling training method. Evaluation of this educational intervention, consisting of quantitative and qualitative methods, focused not only on the immediate educational outcomes but also on the workplace application of the training provided. The workplace evaluation, mainly in the form of case studies and aided by a NIDDM patient counselling kit, identified the specific factors affecting the integration of learned training components into the actual practice of, and elucidated the details of the contextual nuances ascribed to those factors by, individual pharmacists.

In conclusion, the elucidation of personal and contextual factors affecting pharmacists' performance of patient counselling could be achieved by the use of qualitative methods chosen according to important theoretical, methodological and practical research considerations. Findings by qualitative research methods provide meaningful, detailed explanation of the factors previously identified through quantitative means. The educational intervention developed in this work, based on specific needs assessment, contextual analysis and other elements of the CPE development system, tends to enhance pharmacists' counselling performance, albeit, in highly individualised degrees and nature of practice integration. It is recommended that (1) qualitative methods be used in research where detailed aspects of pharmacists' perspectives will be necessary to explain observed phenomena, (2) workplace evaluation and follow-up be considered as value-added components of CPE programs to identify individual and workplace factors which are actually experienced by pharmacists as affecting their application of learning in the community setting and that (3) group support systems in the profession be developed to help pharmacists, particularly owners and managers to address workplace barriers hindering their full assumption of role in patient-oriented care.

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CHAPTER 1

Introduction

1.1 Rationale

This work focuses on the patient counselling by community pharmacists in Tasmania in relation to the profession's re-orientation towards patient-oriented care. At present, there is limited information regarding the state of Tasmanian community pharmacists' patient counselling and a need to gather baseline data on this and other related aspects exists. Although there are universal factors known to affect pharmacists' performance in this area of practice, the contextual factors affecting Tasmanian pharmacists and the extent of their influence are not known. It is envisioned that the identification and greater understanding of these factors is a step closer to bridging the gap between ideal and actual counselling practices.

It was revealed in several studies such as a recent North American review, that there had been no substantial improvement in the quantity and relative quality of pharmacists' patient communication during the past 25 years (De Young 1996). This grim assessment of pharmacists' performance in patient counselling has become a paradox in view of the clinical orientation in pharmacy education, government support and other reinforcing features of the community practice setting in Western countries. While this concern has been repeatedly addressed by various sectors in the profession through practice and education interventions, the re-examination of current philosophical and methodological issues in pharmacy practice research has been recently advocated and the consideration of their alternatives suggested in order to ascertain the real issues confronting pharmacists' counselling practice.

1.2 Objectives

In essence, the main objectives of this work are as follows:

- to develop a research methodology which will help generate a better understanding of the subjective and contextual aspects of community pharmacists' patient counselling;
- to design a specific educational intervention and its workplace evaluation based on the findings of training needs assessment and contextual analysis and
- to identify the factors which affect the application of learning to the workplace within the practice context of community pharmacists in Tasmania.

1.3 Scope

Before the actual studies were conducted, a review of related literature was made. In *Chapter 2*, the role of drug therapy in health care is pursued through a discussion of the social aspect of drug therapy, the evolving concept of health care and drug-related problems which contribute to pharmacy's active assumption of a patient-oriented role in health care. Next is the description of the concept and practice of pharmaceutical care, the health care strategies in Australia and the problems which arise as pharmacists start to pursue pharmaceutical care. The problems in implementation are also discussed in conjunction with their research and educational implication.

Chapter 3 reviews existing studies on patient counselling in community practice. These studies focus on the descriptive characteristics of patient counselling, and the workplace-, pharmacist- and patient-related factors known to affect patient counselling provision by community pharmacists. Prior to that, the conceptual views of patient counselling, its operational definition, its scope and role in pharmaceutical care are presented to set the limitations of the work.

Chapter 4 is a review of previous research orientations, approaches and methods in the light of their appropriateness to, and explanatory power over, pharmacists' patient counselling, particularly the aspect of variability in pharmacists' performance which could not be adequately addressed by traditional research methods. Recognising the merits of

quantitative and qualitative methods, a criteria for deciding appropriateness of methods chosen is provided. In addition, the counselling process is discussed within its social or communication context that is expected to enhance the understanding of, and expectations about, pharmacists' behaviours.

Chapter 5 describes the synthesis of a research framework, its three stages and their respective components. The first stage is the training needs assessment and contextual analysis, composed of general and specific aspects of patient counselling. The second stage is the educational intervention, "A Training Program in NIDDM Patient Counselling for Community Pharmacists". Lastly, the third stage is the program and outcomes evaluation. The outcomes evaluation includes both educational and workplace outcomes. In addition, the research methodology outlining the quantitative and qualitative methods used in the studies, is included. The seven studies comprising this work constitute Chapters 6 to 12. Each of these studies was approved by the Research Higher Degrees Committee of the University of Tasmania and one by the Acute Care Program Committee of the Royal Hobart Hospital.

Chapter 6 is the study of the factors which affect pharmacists' patient counselling in Tasmania. In this study, the attitudes of pharmacists regarding patient counselling (Part 1), the factors affecting the amount of their counselling (Part 2) and the workplace barriers and facilitators (Part 3) are determined through a questionnaire survey.

Chapter 7 is about the medication information-seeking behaviour among Tasmanians which was determined through a telephone survey. In this study, a comparison has been made regarding patients' utilisation of two major sources: expert sources (pharmacist, physician) and lay sources (family and/or friends, books and references). A classification of respondents into highly active seekers, non-seekers, expert sources seekers and lay sources seekers is also made. Significant relationships between clients' utilisation of medication information sources were sought with gender, age and employment status.

Chapter 8 is the first of the three studies in non-insulin dependent diabetes mellitus (NIDDM) patient counselling. It is a study which looks at how community pharmacists

provide counselling of NIDDM patients, how their counselling compares with those of an 'expert panel' and what their training needs are regarding this specific counselling. Using case scenarios in a questionnaire survey, the study was able to generate important data regarding pharmacists' counselling. Training needs and other related information were also gathered from this study.

Chapter 9 is the study of the status of NIDDM patient counselling by key health professionals using qualitative research methods. The study purposed to determine and describe the counselling services available to NIDDM patients in Tasmania, the areas of deficit and difficulties in counselling encountered by health professionals and lastly, their perceptions of the potential role of community pharmacists in counselling diabetic patients. As such, the study has been successful in attaining these objectives and important findings were gathered.

Chapter 10 is the study of the information and resource needs of NIDDM patients. Through an interview survey, patients' knowledge of diabetes and its management, their health information needs and patterns of utilisation of information sources are explored. Significant relationships between health information needs or pattern of utilisation of the respondents and some socio-demographic characteristics were found.

After the training needs assessment and contextual analysis stage was completed, a training program was developed based on the important findings of the preceding studies, using the CPE system developed in a previous work. *Chapter 11* describes the planning and implementation of the training program for community pharmacists on NIDDM patient counselling. The training program, having knowledge and applied communication components, was expected to: address identified training needs and factors affecting pharmacists' patient counselling, be responsive to NIDDM patients information needs and fill in identified gaps in the provision of counselling by other health professionals in the community.

Chapter 12 focuses on the evaluation of the implemented training program. The program evaluation measures the satisfaction of the participants with various aspects of the

training program. The outcomes of the educational intervention were of two kinds: learning outcomes and workplace outcomes. Learning outcomes were measured using quantitative tests while the workplace outcomes were determined by both quantitative and qualitative research methods. Results show that there was a high degree of satisfaction among the participants regarding various aspects of the program. There was some improvement in learning among the participants, based on the differences between their pre- and post-test scores. As for the workplace outcomes, there is variability in how pharmacists apply their learning to their counselling practice mainly from their use of the NIDDM patient counselling kit. Qualitative interviews, organised as case studies, were able to identify factors described and explained by the participants according to their own knowledge and experiences. The training program has been, to an extent, successful in what it purported to achieve, however, the application of learning was highly individualised.

Chapter 13 is a general discussion on the studies done and how the overall results relate to the original objectives of the research.

Chapter 14 is the overall conclusion of the work and the recommendations emanating from the findings of this particular research. Implications on patient counselling research and continuing education are emphasised.

1.4 Limitations

This work explores some aspects of patient counselling in the context of Tasmanian community pharmacy practice which limits the generalisability of its findings to other contexts. The limitations of each study (Studies 1-7) are discussed in its respective chapter. Studies which utilised quantitative research methods are usually limited by low response rate such as Study 3 (Chapter 8) while studies which used qualitative methods are limited by the contextual nature of the method and by the personal characteristics of the participants involved in a study. The latter studies are exemplified by Studies 4 (Chapter 9) and part of Study 7 (Chapter 12).

CHAPTER 2

Drug Therapy in Health Care

2.1 The Social Aspects of Drug Therapy

The use of drugs is an important aspect of total health care delivery for populations and individuals. Drugs, from a public health perspective, are used as effective means to decrease the rate of morbidity and mortality caused by most diseases, symptoms and medical conditions arising from day-to-day living. At the health professional's level, medications are chosen for a patient mainly to: (1) cure a disease, (2) eliminate or reduce symptoms of a disease and (3) arrest or slow down a disease process or (4) prevent a disease or symptomatology (Manasse 1992). A patient's perception of drug use may range from the idea of a total cure of his/her ailment to a means of improving his/her daily physiological functioning, enhancing quality of life and prolonging his/her life expectancy. Whichever perspective is taken, the use of medications is ultimately expected to bring about positive health outcomes.

The collective use of medications by populations and individuals can not be totally separated from the social, economic and political contexts which enable the regulation, procurement, prescription, distribution and use of medications. The use of drugs results from a hierarchy of decision-making emanating from the pharmaceutical industry which develops and produces drugs, to health authorities which regulate the drugs and their distribution, including wholesalers who market the drugs, physicians who prescribe the drugs, pharmacists who dispense the medications to the patient who will use the drug. An example of this hierarchy is the medical care process, which directly determines the choice of therapy, including the choice of medications. An illustration of the process, with consideration of the psychosocial factors influencing or which are influenced by the process, is given in Figure 2.1. The psychosocial aspects of importance to this process are knowledge, beliefs, attitudes and norms held by both the patient and health professionals. These aspects, through a series of health professional-patient interactions,

may be reflected in the choices made during the diagnosis, treatment, as well as the decisions made by the patient regarding drug use.

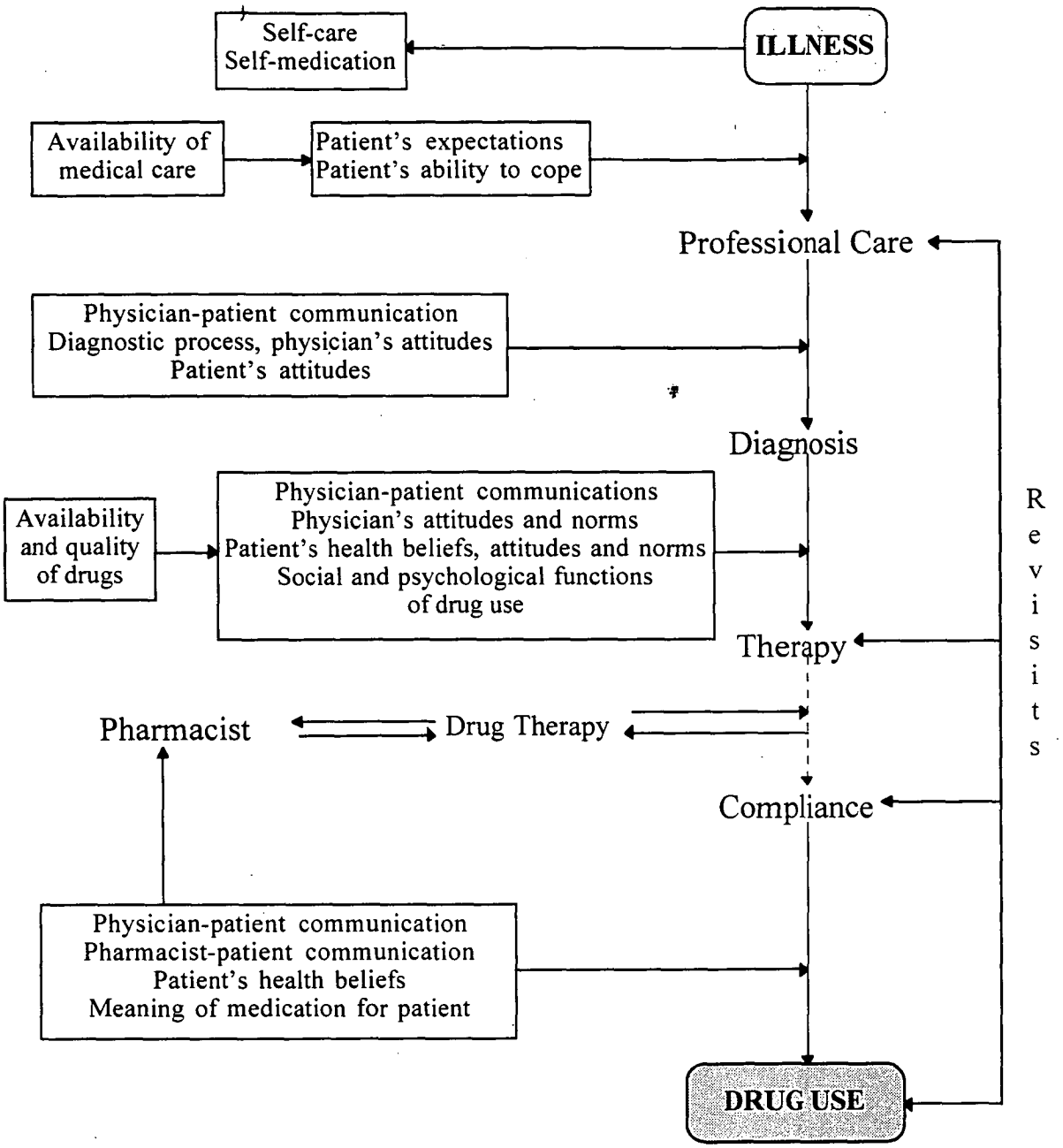


Figure 2.1 Drug use as a component of the medical process (Adapted from Haaijer-Ruskamp and Hemminki 1993).

2.1.1 Self-care

Self-care is a social and political phenomenon which is already recognised internationally as a basic level in a health system (Levin 1990; Reese 1990). Self-care is defined as "the unorganised health activities and health-related decision-making by individuals, families

and groups" (Lunde 1990). The term includes self-medication, self-treatment, social support in illness, first aid in a 'natural setting' such as the home and is a primary health care resource in the health system. As the lowest of the four essential levels of care, self-care is the initial decision made by individuals regarding their health, being the most available. They practise self-care for the purpose of either health promotion, disease prevention, treatment of minor illnesses and injuries or the management of chronic disease and rehabilitation (Lunde 1990). In both personal and macro-economics, self-care is more economical in comparison with expenditures associated with either general practitioner consultation or hospital treatment (Cranz 1990). However, unmet expectations, specifically the absence of, or inadequate outcomes from self-care may encourage an individual to consult a physician about his/her condition. In some cases when professional care is neither available nor affordable, the practice of self-care is perpetuated by switching to its other forms.

2.1.2 Professional Care

When a physician's services are sought, the patient interacts with a physician whose diagnostic practice and prescribing habits are also influenced by different psychosocial factors. Hemminki (1988) categorised those factors into those which affect prescribing at a macro-level –tradition and education of the population, professional thinking and national economy – and those that influence individual physicians – demands and expectations of pressure groups, pharmaceutical industry, research and strength of regulatory power. Denig et al. (1988) proposed a more specific drug choice model which outlines the major factors – opinions of colleagues and other health professions, prior experience with the drug and perceived patient demand – which could impact on a physician's decision, attitude and subjective norm towards prescribing a particular drug for a patient. These views departed from the purely pharmacological reasoning used by earlier researchers such as the 'benefit to risk' ratio to explain drug choices by physicians (Knapp and Oeltjen 1972). In addition to the factors already mentioned, other studies associated duration of patient visits, practice location, and workload, among others to the quantity of prescribed medications (Ilan et al. 1992; Ferguson 1990). A number of recent

reports have described the type of drugs being inappropriately prescribed and their potential adverse outcomes in different patient populations (Nobili et al. 1997; Pharoah and Melzer 1995; Wilcox et al. 1994). Attention has also been given to determining the extent of the contribution of psychosocial factors to the prevalence of inappropriate prescribing among individual physicians and group practitioners. These developments will help guide interventions to improve prescribing habits (Nizami et al. 1996; Anis et al. 1996; Brooks 1993).

The patient brings personal expectations and personal characteristics to his/her consultation with the physician. Cognitive processing, health beliefs, pre-conceived functions of drug use, attitude and personal norms are some factors affecting a patient's acceptance and compliance with health advice and prescription instructions from a physician (Nyatanga 1997; Budd et al. 1996; Wolf 1996; Muma et al. 1995; Barnhoorn and Adriaanse 1992; Ludwig et al. 1990; Svarstad 1976). Health beliefs, expressed in terms of patient's perceived severity of his/her illness, susceptibility and benefits of the therapy are possible predictors of positive health behaviours among different groups (Budd et al. 1996; Muma et al. 1995). It was suggested that patients' beliefs about their disease and their evaluation of treatment options are equally as important as those of the care provider in the development of therapeutic plans and when monitoring patient outcomes (Brown and Segal 1996).

2.1.3 Health professonal-patient communication

The quality of health professional-patient interaction has been cited as influencing the therapy process. Certain communication problems are frequently expressed in patient complaints such as unmet information needs, unclear information received and poor understanding and recall of information by patients (Gordon and Edwards 1995; Zukhovsky et al. 1995; Manfredi et al. 1993; Philipp et al. 1990; Murray 1989; Ley 1988). Attempts to increase the amount of information provided without regard for its understandability were found not only to be ineffective but were also reported to compromise recall (Anderson et al. 1979). Chances given to patients to ask questions,

clarify their understanding and provide feedback on certain therapeutic issues are more likely to iron out miscommunication. However, a high percentage of patients are still unable to ask questions even when they feel the need for information. Ley (1988) attributed this failure to over-deferential attitudes of patients towards physicians. From the standpoint of professional responsibility, it is the role of the physician and other health professionals to improve the quality of their communication with patients.

Patient satisfaction with communication with a health provider tends to contribute positively to the continuation of drug intake (Barnhoorn and Adriaanse 1992). Although many of the studies done on this aspect were on *physician-patient* communication, some findings may provide similar insight into the characteristics of (1) an interactive communication, (2) the health professional and (3) the patient and therefore, may be helpful in understanding the process of interaction involving patients and the pharmacists in the drug use process. Some common features of physician-patient interactions which seem to increase the likelihood of better patient co-operation in treatment procedures are provided in Table 2.1.

Table 2.1 Communication characteristics linked with positive patient therapy behaviour

Interpersonal communication characteristics
Physician-related
• provides information within the context of a therapeutic relationship
• establishes positive views about illness and medications while acknowledging patients' fears and uncertainties
• friendliness and presence of social support
• individualised attention and expression of warmth and courtesy
• clarifying and summarising information received and conveying information at a level understandable to patients
Patient-related
• satisfaction with health care provider in terms of time, met expectations, attention
• motivated information-seekers
• welcomes opportunity for learning
• willingness to participate in the treatment plan
• being able to talk about his/her fears of the future, illness and death
• has understanding and recall of what has been told by the physician

(Furlong 1996; Price 1996; Bebbington 1995; Koning et al. 1995; Manfredi et al. 1993; Barnhoorn and Adriaanse 1992; Corney et al. 1992; Ley 1988; Comstock et al. 1982)

Most of the characteristics given in Table 2.1 were taken from the patients' perspective of a satisfying communication with their health care provider. It appears that satisfaction has been based on three aspects of the interaction, namely (1) the cognitive aspect, the amount and quality of information received, (2) the affective aspect, patient's perception of the physician's willingness to listen and understand and (3) the behavioural aspect, which refers to the patient's assessment of the professional competence of the physician during the consultation (Ley 1988).

Gordon and Edwards (1995) enumerated several benefits derived from good physician-patient interaction which could also be applicable to other health professionals' relationship with their patients. These benefits include the following:

- physicians gather more accurate data and make more correct diagnoses;
- patient resistance to therapy and management will be reduced;
- health professionals are more capable of helping patients cope in situations that exacerbate their disease;
- patients will have more trust in their caregiver;
- greater patient satisfaction with visits to physicians;
- higher assessment of physicians' technical skills by their patients;
- patients are less likely to seek alternative treatment including self-medication and
- more importantly, patients' compliance with therapy.

2.2 The Changing Concept of Health Care

2.2.1 Decision-making in health care

The need for improving communication with patients has a wider basis than just meeting patients' expectations and their individual therapeutic goals. The current goal of health care in most Western countries is the attainment of better health outcomes for the wider population. In Australia, for example, the government is counting on the involvement of all sectors of society in the decision-making process about priorities and directions in health care (Commonwealth Department of Human Services and Health 1994). Patients are encouraged to take responsibility for their own health while health professionals are

expected to contribute quality and cost-effective care in a range of community and institutionally-based settings.

The transition of a patient's role from a passive to an active health decision-maker, without some guidance, is difficult. Patients tend to look up to health professionals to make decisions for them, one hallmark of the more traditional 'passive-active model' of therapeutic relationship in which the patients see themselves as incapable of participating in their own care (DiMatteo 1991). Patients were regarded as 'possessing' certain levels of knowledge and attitude and were making decisions according to a quasi-rational model of what was best for them. The model did not recognise the 'active' nature of people's efforts to make sense of themselves, of others and of the social world in which they live (Ingham and Bennett 1990). In addition, many health professionals are used to exercising their authority over health care matters on the basis of education and expertise. This mindset, not only imposes on health professionals a superiority over health decision-making, but may also discourage patients from taking initiatives in their own health care. The perpetuation of such a concept in medical practice may partly explain patients' reluctance to make requests, to ask questions and to clarify issues with their physicians during consultations (Ley 1988).

2.2.2 People empowerment

The concept of 'people empowerment' spawned by the World Health Organization (WHO), translated into similar concepts by different countries and fostered the need for a closer relationship between patients and health professionals. This concept delegates responsibility to health professionals to 'empower' patients through the provision of relevant health information and education in order for them to ably contribute to their own care. Emphases were on the areas of primary health care and rational drug use. In WHO's revised drug strategy, the provision of information about drugs and pharmaceutical products is considered a prerequisite at all health care levels to ensure their proper utilisation and to promote rational prescribing. Those levels involve regulatory

authorities, physicians, pharmacists, nurses, other health professionals and patients (WHO Expert Committee 1985).

2.2.3 Medical paradigm shift

The choice of a better medical paradigm about health and illness is being evaluated among the medical and allied health professions. At present, there seems to be a strong advocacy for 'biopsychosocial' over the 'biomedical' concept of health and illness. The biomedical concept espouses that illness is a physiological event and that medical intervention is intended to help restore the imbalance through objective biochemical means. This concept while useful in the search for new drugs and diagnostic tests has also displaced the role of the patient in the treatment process, a fact which may have alienated the physician's need to develop a closer relationship with the patient (Roter 1995). Patients' representation of illness likewise has been set aside as part of the treatment as it does not equate with established medical wisdom (Murray 1990).

In contrast, the biopsychosocial model posits that "biological, psychological and social influences comprise a complex system of interactions which determines an individual's health, vulnerability to disease and reactions to disease" (Temoshok 1990). The basic premise of this model is holistic. Health is not limited to physiological wellness and disease is not limited to organs; both result from the interplay of several factors. The model does not discount the value of the biological domain in health and illness but recognises the influence of the psychological and social aspects impinging on biological processes. This line of thinking is supported by findings from the field of psychoneuroimmunology (PNI), "a multidisciplinary area that has as its focus the dynamic interactions among behavioral factors, the central nervous system and the endocrine and immune systems" (Ratliff et al. 1989).

Relationship of either life stressors, social support, coping mechanisms or psychiatric disorders with the development or cure of disease, exacerbation or reduction of symptoms, physiological functioning and rehabilitation are some of the interest areas in the domain of PNI. Previous studies cover substantial evidence regarding the influence of

stress, negative effect, clinical depression, social support, repression/denial on the molecular and chemical indicators of immune status and function (Cohen and Herbert 1996). Clinical progression of conditions like AIDS, cancer, infectious diseases, cardiovascular diseases, and other chronic conditions were found to be affected by health-compromising behaviours and life events (Goodkin et al. 1996; Kiecolt et al. 1995; Talo et al. 1995; Baltrusch and Stangel 1991; Schwartz et al. 1991). Well-being and rehabilitation, on the other hand, were benefited by stress reduction and management, coping, social support and other psychosocial factors (Baum et al. 1995; Mulder et al. 1995). On the treatment aspect, management of lifestyle diseases, neurological disorders and even primary health had been helped by the inclusion of coping strategies, biofeedback, cognitive behaviour therapy and other behavioural methods (Gilbar 1996; Wickramasekera et al. 1996).

Although there were criticisms about the legitimacy of the 'biopsychosocial model' as the new medical paradigm due to its complexity, lack of prediction, situatedness and control, the current focus on a patient-oriented or patient-centred practice among health professionals seems to favour its acceptance (Foss 1994; Lyon 1993). The relevance of this new model may have been accepted for the following reasons:

- ability to explain the body and health disorders from a systems theoretical perspective;
- the patient as a 'body' and 'person' could be treated as one (Freund and Meredith 1995; Solomon 1993);
- it is a relationship-centred model, an improvement from the previous model (Foss 1996);
- conflict issues regarding its complexity are further addressed by more recent studies in this area (Curtis 1995);
- accumulation of research findings regarding its value in preventive and therapeutic medicine and
- the notion of holism which this model invokes is expected to reinforce a more humane medical practice (Freedman 1995).

The paradigm shift reflects itself in the educational component of the medical profession. The person-centred or humanistic model developed by Carl Rogers (Rogerian model) in

psychology was considered useful in developing relationship-building skills among medical students (Simmons et al. 1995). Inclusion of practical patient-centred and problem-based interview skills in the medical curriculum was expected to instill psychosocial beliefs in, and facilitate the detection of psychosocial problems among patients by future physicians (Williams and Deci 1996; Zimmerman and Tansella 1996). Collaboration between medical and the behavioural sciences was also seen as a means to develop greater appreciation of the biopsychosocial model among disciplines (Medalie and Cole-Kelly 1993). Incorporation of patient's perspectives through life narratives, personality styles and motivated behaviours might illuminate understanding of psychosomatic illnesses among medical trainees (Wise 1993).

In addition, studies in medical practice tend to support this new paradigm. A study concerning communication styles, in the context of several practice paradigms, found that patient satisfaction was highest with the biopsychosocial style and lowest with the narrowly biomedical pattern (Roter et al. 1997). A separate study found that among several communication styles, one that significantly favours high psychological effectiveness of treatment is the 'ego-centric' style where patient's convictions about the state of his/her health were made part of the therapeutic planning (Trzebna 1991).

Developments in the area of communication in health psychology also nurture a better relationship concept between the patient and the health professional, particularly the physician. The 'mutual participation model' of relationship postulates that the physician and the patient make joint decisions about every aspect of care, from the planning of diagnostic measures to the choice and implementation of treatment (DiMatteo 1991). In this partnership, both parties are expected to provide input and exercise mutual responsibility towards the achievement of a common health goal for the patient. Another model, the 'deliberative model' of relationship regards the physician as a teacher or a friend who engages the patient in a dialogue for the purpose of empowering the latter to consider values and select the best alternative that fits his/her values (Emanuel and Emanuel 1992). The 'partnership model' described by Quill (1983) recognises that each participant has unique responsibilities; that each party must benefit from the relationship;

that there is a willingness to negotiate and lastly, the relationship is consensual and not obligatory. Gordon and Edwards (1995) further stressed the 'non-power based' characteristic of this partnership by using the term 'collaborative relationship' which describes a non-power, non-controlling, democratic relationship that has mutual participation of, and two-way communication between, patient and physician. Comparison of the benefits of these models with several others convinced these authors to acknowledge the importance of the patient in health decision-making.

The change of paradigm in medical practice also included a re-examination of the weak health professional-patient links in the drug therapy process. Under the biomedical paradigm, communication skills were considered 'non-scientific' when compared with clinical skills, being more within the domain of the social sciences (Engel 1988). However, communication becomes an indispensable aspect of clinical practice in the recent relationship-centred approach, since it enables the effective establishment of interpersonal rapport, data-gathering, diagnosis, patient education and counselling for the purpose of motivating patients to comply with medical recommendations (Roter 1995). A relationship-centred practice, therefore, requires the improvement of communication to facilitate patient compliance with medication use. Through the years, health professionals' interaction with patients has been investigated for its impact on patient's knowledge, attitude and more importantly, drug use behaviour. However, most of the studies done have been on behaviour implementation, as in actual drug-taking, and only a few delved into people's views about their medication intake. The latter, obtained by qualitative studies, could probably illuminate the observed patient's compliance behaviour (Fallsberg 1994).

2.3 Drug Use Problems

2.3.1 Non-compliance

Non-compliance or non-adherence, that is, a patient's failure to follow a drug regimen as instructed is a well-known problem in drug use with about 40-60% of patients not taking their medications as prescribed (Kingsnorth and Wilkinson 1996; Gordon and Edwards

1995; Haynes et al. 1979). This problem covers inadequate intake, excessive intake, incorrect frequency of intake, discontinuation of drug intake, and intake of medications other than prescribed (Ley 1988). Qualitative studies define compliance as 'intention of medication behaviour' among patients and classifies it into several categories reflecting different reasons for drug compliance. Non-compliance based on these categories is grouped into three: (1) minimisation by reduction of frequency, reduction of dose or altered frequency of intake, (2) selection between drugs, which is selective intake among several choices and (3) combination of strategies (Fallsberg 1994).

Non-compliance alters expected therapeutic outcomes. With chronic illnesses such as asthma, diabetes and hypertension, it may result in increased severity of symptoms, serious complications, disability and may be fatal in some cases (Weinstein 1995; Sakai 1994). In terms of health care outcomes, non-compliance has a negative impact on health-related quality of life, health status and functional status of patients (MacKeigan and Pathak 1992). Since patients do not receive full benefits from their medication, non-compliance may lead to additional prescriptions, extra consultation with the doctor, unnecessary or prolonged hospitalisation and lost workdays, the cost of which has to be shouldered either by individuals, health organisations or the government (Lok and Lau 1995; Weinstein 1995; Hallas 1993; Ley 1988). In the U.S. alone, nearly $100 billion is lost each year through increased health care costs and lost productivity (National Pharmaceutical Council 1994).

Non-compliance with a medication regimen is a complex issue and numerous factors are known to contribute to the problem. However, a study of 200 variables affecting compliance concluded that most have inconsistent relationship with compliance and therefore may not be useful in predicting patients' behaviours (Morris and Schultz 1992). Only those which may provide the background for resolving drug compliance problems through the improvement of patient-health professional interactions are discussed here and are grouped as:

- patient-related;
- environment-related;

- drug-related;
- regimen-related and
- health professional-related factors.

The approach will use the patient as the central locus of compliance and other factors will be discussed based on their effects on the patients' experiences with the drug-use process, as shown in the following diagram, Figure 2.2. These factors were reported to impinge on patient's experience and affect his/her active decision-making or intention to follow drug regimen as prescribed.

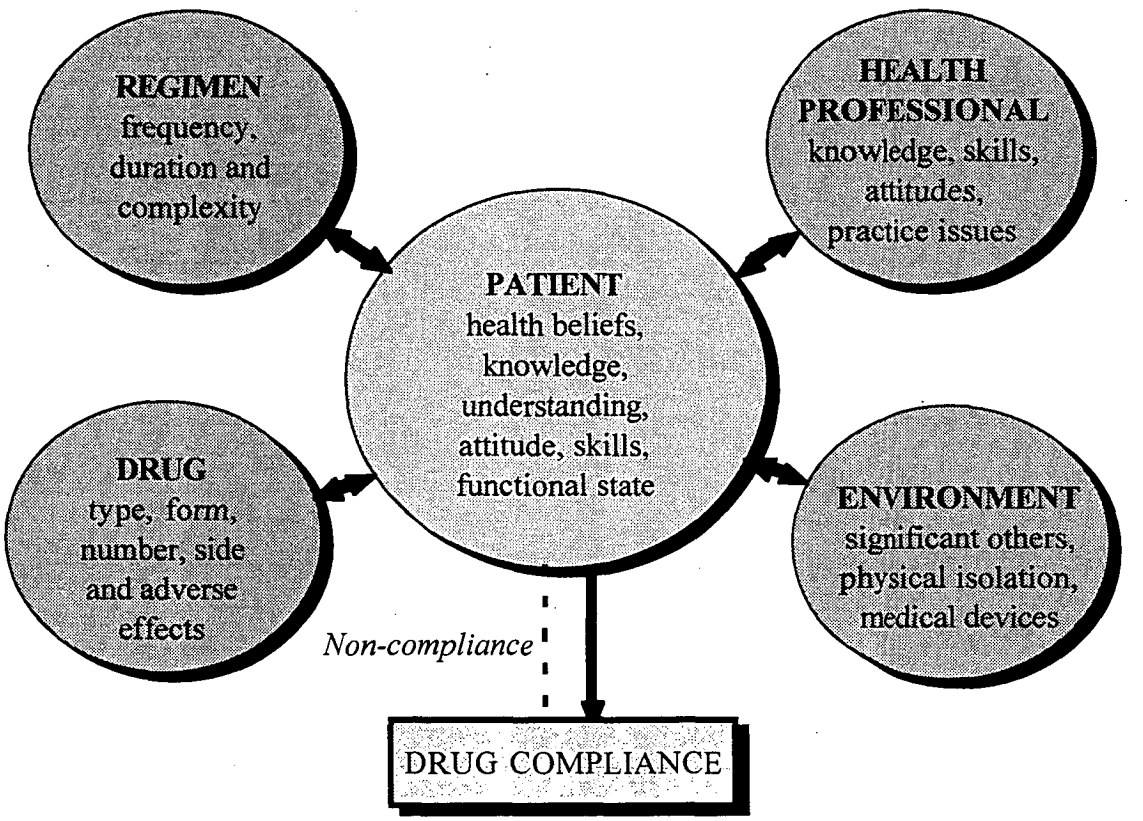


Figure 2.2 Some internal and external factors affecting patient's medication compliance.

Based on a cognitive psychology perspective, Figure 2.2 assumes that the patient's decision-making regarding compliance is a result of a dynamic interplay between cognitive, behavioural and environmental influences among factors involved in the drug use process (Lilja and Larson 1994). A patient's pre-conceptions about drug, regimen, health professional and the environment are subjected to a reciprocal interaction with any of

these factors, a process which may either strengthen or lessen their influence on his/her compliance behaviour.

2.3.1.1 Patient-related factors

Lack of knowledge

Internal patient factors affect compliance. Deficit in knowledge and understanding about the purpose and effects of medication intake was responsible for some drug intake errors (Lau et al. 1996). For example, lack of knowledge has been identified as one significant factor in determining morbidity among asthmatic patients along with attack management skills (Lee et al. 1995). In a study among 1,074 patients who were hospitalised for drug misadventures (inappropriate dosages, allergies, underuse), 69.4% had a limited understanding of the potential adverse effects of their regimen and 71% had no knowledge about drug interactions (Schneitmanmcintire et al. 1996).

Health beliefs

Degree of compliance was also associated with patients' health beliefs among AIDS, tuberculosis patients and those taking antipsychotic medications, to name a few groups (Muma et al. 1995; Barnhoorn and Adriaanse 1992). This relationship with health beliefs was found to be significant in both prospective and retrospective studies (Ley 1988). Patients who have favourable attitudes towards health professionals and treatment in general tend to adhere to medication instructions (Gordon and Edwards 1995; Korsch and Negrete 1972). Many researchers attribute such motivation to the degree of patient satisfaction with professional services; high patient satisfaction correlates with high rates of adherence and vice-versa (Gordon and Edwards 1995; Ley 1988).

Lack of skills

Lack of specific skill in medication scheduling has been implicated as compromising compliance, with patients taking medications at times other than instructed (Chappell et al. 1997; Kruse et al. 1994; Ley 1988). Improper use of devices such as insulin syringes

accounts for under or overdosing of insulin while inconsistent use of appropriate dose measurement devices like a metered-dose inhaler causes variable intake of medications (Brandt and Munting 1994). Furthermore, more than 45% of elderly patients were reported to have difficulties in opening a range of commercial drug packaging, in breaking a bar-scored tablet and in reading medical instructions (Nikolaus et al. 1995).

Functional state of the patient

The functional state of the patient, complicated by age and illness, often interfere with recall, understanding and carrying out of proper instructions which resulted in underuse, overuse and discontinuation of certain medications for various medical conditions (McLane et al. 1995; Salzman 1995; Ley 1988). In addition, the asymptomatic nature of some illnesses, perhaps due to feeling of wellness, tends to decrease compliance rates (Khalil and Elzubier 1997).

2.3.1.2 Environmental-related factors

Eighty percent of the management of prescription medications is done in the home environment and is critically decided upon by patients, family members, carers and significant others. Patients' opinions (negative or positive) regarding the need for, and value of medication, the appropriateness of the dosing regimen and other aspects of medical care are influenced by significant others (Smith and Basara 1995). Patients' ability to comply with medical therapies was correlated with attitudes, beliefs and behaviours of family members and significant others (McLane et al. 1995; Osterweis et al. 1979). For those living alone, the absence of social support from family, friends and carers was recognised by these patients as a top individual need (Gates et al. 1995; Feldman and De Tullio 1994).

Among children and dependent adults, variable management by carers was found to affect compliance and error rates in the administration of medications (Chappell et al. 1997; Gibson 1995). Monitoring devices such as sphygmomanometers and blood glucose testers, frequently used in home care, had effect on patient's compliance behaviour. In

addition to the need for skills, a problem with the use of these devices is their accuracy. A study of blood pressure control among community dwellers found discrepancy in obtained values between home devices and those used in screening measurements. This had created difficulty in ascertaining normotensive from hypertensive individuals (Nagai et al. 1996).

2.3.1.3 Drug-related factors

The type of drug and its side and adverse effects are known to discourage drug-taking behaviour among those taking anti-ulcer agents, antibiotics, anticoagulants, non-steroidal anti-inflammatory agents, antihypertensive drugs, neuroleptics and beta-blockers, among others (Khalil and Elzubier 1997; Hallas 1996; Unge 1996; Gleckman 1995; Hale 1995; Lee 1993; Malfertheiner 1993). A negative correlation was found between gastrointestinal symptom severity score and percentage of erythromycin tablets taken while a significant positive correlation was seen between compliance and outcome ($p \leq 0.001$) (Anastasio et al. 1994). A study of hormone use among women by Kruse et al. (1993) found that compliance declined for patients who experienced nausea and vomiting compared to those who did not suffer from these side effects.

Unfamiliarity with the safety of some drugs, eg. inhaled steroids and fear of consequences also tends to hinder asthmatic patients from increasing doses when necessary (Van der Palen et al. 1997; Van Ganse et al. 1997). The dosage form itself, such as the metered dose puffer, is subject to a patient's perception of ease of use and effectiveness. These characteristics were linked to selective compliance by patients (Kelloway et al. 1994).

2.3.1.4 Regimen-related factors

Compliance tends to decrease with prolonged duration of therapy, particularly in studies which followed cohorts of patients over time (Ley 1988). Similar findings were arrived at in a comparative study between hypertensive patients in new drug regimen and those in continuous therapy. The study noted a decline in the compliance of those in continuous therapy during the study period (Kruse et al. 1994). Frequency of intake also seems to

exhibit an effect on compliance. A study on women taking oral hormone therapy found that compliance is higher among those who take doses twice daily than those on four times daily doses, 85% versus 65%, respectively (Kruse et al. 1993). Compliance also improved by 30% when long-acting drugs were switched from a twice daily to a once a day regimen, however, this increase was also accompanied by a 15% increase in the number of patients with one or more no dose days (Waeber et al. 1994).

Complexity of regimen, either the use of multiple drugs or therapies, significantly adds to the inconvenience of maintaining adherence to regimen (Ley 1988). The triple therapy for *Helicobacter pylori* eradication was considered more effective than dual therapy, however, their use was limited by frequent and significant side-effects causing poor drug compliance (Unge 1996). Among the elderly, intake of multiple drugs, with an average range of three to ten, has the tendency to increase errors and is complicated by incidents of forgetfulness. Data suggest that as many as 40% of elderly patients discontinue their medications, 10% take medications intended for others and about 20% take drugs not prescribed by their physicians (Salzman 1995). In another study, 41% of the patients were taking at least one drug in addition to prescribed drugs (Nobili et al 1997).

Some drug regimens disrupt lifestyle or daily activities which many patients find difficult to maintain (McLane et al. 1995; Rogers and Bullman 1995). Unpleasant experiences with drug intake – for example, gastrointestinal disturbances, appetite changes, dry or sore mouth or altered taste perception – could prompt individuals to use over-the counter drugs to obtain relief from disturbances, and in some cases, may stop them from continuing the intake of medications (Coleman 1996). For some patients, cost and availability of the regimen are considered real barriers to total compliance (Khalil and Elzubier 1997).

2.3.1.5 Health professional-related factors

Sometimes a patient's perception of a health professional's role and his/her actual provision of services influences the patient's medication adherence and seeking of medical help (Weinman 1990). Some patients distinguish between advice from a specialist and a

general practitioner and this was reflected in their greater compliance with the specialist's advice (Lau et al. 1996). Some patients prefer the physician rather than other professionals to give them health advice and such selectivity limits the amount of information patients can gain from their interactions with other health professionals (Bester 1992). Many aspects of communication were studied for their effect on compliance: perceived length of time spent with the physician and the provision of feedback were related to increased compliance among hypertensive patients (McLane et al. 1995; Kruse et al. 1994). Provision of additional written and verbal information were perceived by patients as 'very helpful' and 'important' in increasing their knowledge about illness and treatments (Fitzgerald and Glotzer 1995). As reported in many studies, failure of the physician to attend to, and discuss, patients' concerns and information needs was more likely to produce dissatisfaction with services (Gates et al. 1995; Zhukovsky et al. 1995; Weinman 1990). Ley (1988) summarises that communication-related complaints among patients which correlate with low compliance as (1) poor transmission of information from patient to doctor, (2) low understandability of information addressed to the patient and (3) low levels of recall of information by the patients.

For their part, health professionals, specifically physicians, have overestimated the time they spent giving information to patients by about a factor of nine and have dominated the interaction by a series of questions (Gordon and Edwards 1995). It has also been observed that many health professionals have not received adequate training in communication, interpersonal skills and behaviour change strategies and therefore, were not able to demonstrate these skills in practice (Rogers and Bullman 1995).

The problem of non-compliance and its health consequences is just one important reason why health professionals have to intervene effectively, in terms of influencing patients' knowledge and understanding, attitudes and skills regarding their illness, their medications, the overall treatment process and its outcomes.

2.3.2 Adverse drug reactions

Another rationale for desiring better communication with patients is the health professionals' knowledge of the inherent benefits and risks associated with drug use. Adverse drug reactions (ADRs) could be very costly for both hospital and individuals. Of ADRs responsible for hospitalisation, one-third to one-half were avoidable and could have been prevented (Nelson and Talbert 1996). Since general practitioners' reporting of adverse drug reactions was an underestimation of actual ADRs, one for 24,333 cases detected by other means, ADR cases in the community are probably greater than previously expected (Moride et al. 1997).

Adverse drug reactions, implicated in year-long studies, accounted for an average of 2-5% of hospital admissions and 16.7% of intensive care cases (Nelson and Talbert 1996; Schneitmanmcintire et al. 1996; Huic et al. 1994). A review of international studies on ADRs between 1966 and 1989 involving 41 to 11,891 patients documented that the majority of ADR-related admissions were due to side-effects (71.5%) and excessive effects (16.8%) and the rest to patient-specific reactions to drugs (Einarson 1993). A number of drugs are commonly reported to cause ADRs. Non-steroidal anti-inflammatory agents (NSAIDs) and analgesics, cardiovascular agents, steroidal medications, antimicrobials and central nervous system drugs are some examples (Rea et al. 1996; Huic et al. 1994; Stanton et al. 1994). Aspirin, NSAIDs and medigoxin, responsible for intensive care hospitalisation, cause gastro-intestinal bleeding, cardiac rhythm disturbances, blood cell disorders and hypoglycemia (Huic et al. 1994). The long-term use of NSAIDs has also been a significant factor in observed ulcer bleeding, chronic cystitis and other related urinary symptoms in a number of patients (Crawford et al. 1997; Hawkey et al. 1997; Stanton et al. 1994). These are just but a few of reported ADRs which, without the guidance and information from health professionals, may continue to expose patients to unwanted risks.

2.3.3 Adverse drug interactions

The occurrence of a drug interaction was reported to increase with (1) an increase in the number of drugs taken by a patient, (2) multiple medical conditions, (3) consultation with several prescribers and (4) self-prescription, which was often aggravated by the aging process (Le Jeunne and Hugues 1995; Walinsky 1993). Though not all drug interactions are clinically significant, some of these interactions could lead to extreme adverse effects and even death. Along with ADRs, but to a lesser degree, drug interactions have been implicated in hospital admissions. In Australia, 4.4% of drug-related admissions in a state hospital were due to drug interaction (Stanton et al. 1994). Drug interaction also accounted for 23.8% of drug-related hospital admissions in a 14-month study in which 77.4% of patients were taking two or more drugs (Huic et al. 1994). Since most significant drug interactions occur among the elderly and chronically ill patients, their care should include a systematic drug review (Le Jeune and Hugues 1995).

2.3.4 New drugs and alternative medicines

As a result of advanced technology and research, new drugs are constantly being introduced into the market. Although the commercial production of these drugs is based on sound clinical results, it will take years before the public will be informed regarding their potential side-effects and adverse reactions (Dwyer and Kesson 1997; Tamminga 1997). Therefore, careful monitoring of these drugs by both patients and their health care providers will be necessary. Even the use of new dosage forms and packaging materials was considered to compromise self-care in home settings especially among the elderly (Brown et al. 1997; Nikolaus et al. 1985). In this case, teaching about the proper use of these devices is an area in which health professionals could provide some help.

Use of alternative medicines such as herbal remedies is also widespread. The assessment of adverse effects in herbal preparation is considered to be difficult and problems have resulted from contamination with heavy metals and adulterants. In a World Health Organization conference regarding folk medicine in 1990, two main concerns were brought forward: (1) the need for legislation and regulation of herbal medicine similar to those

applied to other medicinal products and (2) herbal products should be of good quality, safe and efficacious. The training of health professionals, including traditional practitioners, would be necessary to ensure public safety regarding the use of these remedies (Cartwright 1996). Health professionals are urged to include these preparations in a patient's drug history to provide guidance on their effects (Drew and Myers 1997).

2.3.5 Inappropriate prescribing

In a national survey, inappropriate drug prescribing of about 20 medications occurs with at least 23.5% of people living in the U.S. communities, aged 65 and above, in which one or more contraindicated drugs are prescribed. Among the drugs prescribed were those that which may increase the susceptibility of this age group to the risk of adverse drug effects (Wilcox et al. 1994). In other cases, drugs are not prescribed for specific patient cases despite their reported benefits. A study on the use of thrombolytic drugs in acute myocardial infarction (AMI) in three hospitals reported that only one-third of admitted AMI patients had received a thrombolytic drug. Of the number of patients who did not receive any thrombolytic drug, one-fifth could have benefited from the use of those drugs (Agusti et al. 1997). Also, unnecessary changes in drug treatment, at a 50% turnover rate, were also observed over time in patients with chronic medications upon their hospitalisation and at discharge. Some drugs were either discontinued or added during hospitalisation by hospital physicians or after discharge by general practitioners (Himmel et al. 1996). Even in clinic visits, drug treatment alteration was found in 72% of cases of those patients taking three or more medications. In 54% of altered drug regimens, one or more drugs were added (Girvin and Johnston 1996). These cases of excessive and unnecessary prescribing tend to place outpatients at greater risk of drug toxicity and often lead to confusion about their medication regimen.

2.4 Pharmaceutical Care Concept and Practice

2.4.1 Scope

The above problems in drug therapy together with the ever changing characteristics of health care systems and populations, drug development and technological advancement provide a great opportunity for pharmacists to maximise their professional contribution to the area of drug use and other related aspects of health care. A shift to patient-oriented care is important for the profession to strengthen the patient-pharmacist relationship which has suffered as a result of the scientific and market forces which dominates professional practice in this century. The development of clinical pharmacy, which originated from institutional practice in the 1970s, has been a nucleus in fostering the role of the pharmacist in direct patient care. It has also paved the way for the development of the 'pharmaceutical care' concept in the 1990s which the whole profession embraced to establish a common goal and mission in health care.

Pharmaceutical care is defined as "the responsible handling of potential or actual drug-related problems to achieve definite patient outcomes by designing, implementing and monitoring a therapeutic plan in co-operation with other health professionals" (Hepler and Strand 1990). To achieve the desired outcomes, pharmacists are expected to (1) establish their therapeutic relationship with the patient, (2) gather relevant patient and therapy information, (3) identify and analyse drug-related problems, (4) design and implement appropriate care intervention and (5) monitor and document results of intervention (McDonough 1996).

Adopted by most Western countries in this decade, the 'care concept' appeared promising in terms of documented economic benefits and more importantly, has shown potential for generating positive health outcomes for its recipients; such as has been exemplified in the control of symptoms and complications in various medical conditions, improved patient acceptance and compliance with therapy among several patient groups (Konzem et al. 1997; Lucas et al. 1997; Munroe et al. 1997; Shibley and Pugh 1997; Smith

et al. 1997; Jaber et al. 1996; Park et al. 1996; Schumock et al. 1996; Schering 1994). The identification of drug-related problems and the corresponding provision of appropriate intervention by pharmacists has resulted in cost-savings particularly in the choice of cost-effective alternative drug therapy; dosage, nutrition and pharmacokinetic consultation; discontinuation of drug therapy and correction of drug therapy error (Yee et al. 1997; Saenz-Calvo et al. 1996; Montazeri and Cook 1994). The new practice was also able to contribute to health care indirectly by reducing inappropriate prescribing among general practitioners and the improvement of co-operation between pharmacists and other members of the health care team (Hanlon et al. 1996; Jepson and Strickland-Hodge 1995; Grymonpre et al. 1994). The concept has gained worldwide acceptance and pharmacy groups and individual practitioners have started to apply the concept in their practice. A variety of roles and functions, however, have been assumed by pharmacists in different work settings to interpret and implement patient-oriented care.

Currently, an increasing number of pharmacists in health institutions, particularly in Western countries, are involved in clinical tasks associated with pharmaceutical care. A 1996 national survey of pharmacy practice in acute care settings by the American Society of Hospital Pharmacists (ASHP) revealed that there was a substantial increase in the provision of clinical services to inpatients particularly in drug use evaluation, adverse drug reaction programs, drug-food interaction screening and medication error management programs. Overall, the provision of pharmaceutical care increased from 55% in 1994 to 65% in 1996 (Reeder et al. 1997). A national survey which measured pharmacy practice workload in Australian hospitals showed that clinical pharmacy is practised by 66% and drug information services by 55% of the hospital respondents (Ng et al. 1997). In the United Kingdom (UK), the rate of physician-accepted clinical interventions by ward pharmacists had increased in terms of yearly rate of occurrence. These interventions involved drug therapy monitoring, pharmaco-therapeutic consultations, patient counselling and education (Barber, et al. 1997). Similarly, patient-oriented care has extended to other related practice areas: ambulatory care departments, clinics and managed care settings. In these areas, care implementation ranges from general clinical

services to comprehensive disease state management in coordination with other members of the health team (Yee et al. 1997; Erickson et al. 1997; Dasilva 1996; Lewis 1993; Michel 1993).

2.4.2 Strategies for advancing pharmaceutical care in Australian pharmacy practice

Australia is taking the same development path in pharmacy practice as the North American countries and leading professional organisations such as the Pharmaceutical Society of Australia (PSA), Pharmacy Guild of Australia (Guild), Australian College of Pharmacy Practice (ACPP) and the Australian Association of Consultant Pharmacists (AACP) have become unanimous in advocating the pharmaceutical care philosophy and practice to community pharmacists. Because of some common practice characteristics and goals, Australia was able to draw lessons from the problems, interventions and outcomes relating to pharmaceutical care implementation in other countries. Apart from this change within the profession, there are significant developments in Australian society and its health care system which tend to favour patient-oriented care in community pharmacy settings and for which active involvement of pharmacists is indispensable (Table 2.2).

Table 2.2 Recent significant issues and developments in the Australian health care system

Issues	Developments with implications for pharmacy practice
National Health Goals into the next century	• Equitable access to high quality health care services • Cost-effective approaches to health improvement through prevention and health education through all levels of care • Access to information to enable individual Australians to make informed decisions on healthy lifestyles • Emphasis on quality use of medicines
Increase in government spending on drugs and total health expenditure	• Evidence based health care (Better Practice Program) • Changes in Pharmaceutical Benefits Scheme, Medicare Benefits Schedule • Coordination of care, community-based care
De-institutionalisation of health care	• Coordination of care, community-based care
Changing health characteristics of the population • Increased need for aged care • Increased prevalence of chronic and lifestyle diseases	• Aged care assessment teams • Community-based medication management for Veterans and Residential Aged Care Facilities • Public immunisation and screening programs for chronic diseases such as cancer and diabetes

(Greenwood 1997; Smith 1997; Berbatis and Sunderland 1996; Pharmaceutical Society of Australia 1996a; Jenkin 1996; Graham 1995; Commonwealth Department of Human Services and Health 1994)

Innovations along the line of patient-oriented care are currently being generated by pharmacy organisations, academic institutions, marketing groups and individual pharmacies which run parallel to the government's health care priorities. Many of these programs are funded or subsidised by government agencies in their trial or initial implementation. Some of these programs are provided in Table 2.3.

Table 2.3 Pharmacy-initiated practice and training programs in the 1990s

Practice Programs	Training Programs
• Pharmacy Self-care (PSA) • Pharmaceutical Care Trials (PSA branches) • Pharmacy Practice Models (University of South Australia)	• Pharmacy Self-care (PSA) • Pharmaceutical Care (PSA, APhA) • Specialty Pharmacy Practice (PSA, ACPP) • PSA Branch CPE Programs

(Angley et al. 1997; Berbatis and Sunderland 1996; PSA 1996b, 1996c)

The practice programs' common approach is the delivery of health care based on a patient-oriented framework with emphasis on the structure, process and outcomes of pharmacists' interventions. Most of these programs target specific groups of patients in the community who are in need of constant guidance in their drug therapy management. The Self-care program, started ten years ago, highlighted the role of the community pharmacist as health educator. The Self-care Kit, available to participating pharmacists, consists of various educational materials and counselling aids on various health topics which pharmacists can use in their patient counselling. The program also maintains a health campaign calendar in which public awareness on a specific health condition is highlighted on a monthly basis (PSA 1996b).

Pharmaceutical Care Trials, supervised by PSA state branches, are participated in by pharmacists who underwent pharmaceutical care training courses conducted by ACPP in coordination with the American Pharmaceutical Association and leading U.S. care innovators (Kelly 1997). Emphasis in these trials is on the transformation of work systems, skills and sites towards patient-oriented care which is already taking place in a number of pharmacies in Queensland, New South Wales, Victoria and South Australia (PSA 1996c).

Pharmacy practice models in disease management were also developed by the Pharmacy Faculty of the University of South Australia under the auspices of the Department of Health and Family Services. In this project, a small number of pharmacists in their chosen specialty systematically perform pharmaceutical care with emphasis on appropriate intervention, proper documentation and outcomes evaluation. The project team guides and trains pharmacists in formulating workable systems while tackling arising problems in the implementation of the project (Angley et al. 1997; Gilbert et al. 1996).

More recently, Coordinated Care, a joint national project between the Council of Australian Government (COAG) and community health providers including pharmacists, is being trialled in 12 areas in six states (Emerson 1997). This project is aimed at coordinating cost-effective health care services for those people in the community with

complex or chronic conditions who are incapable of adequate disease management. In each trial, the health care team recruits patients, develops and costs individual care plans and monitors patients. Pharmacists are involved in different capacities in the trial – management, provision of patient data and medication reviews – which are within the realm of patient-oriented care (Davies 1996).

These recent developments in both the training and practice of community pharmacists could facilitate the translation of the new care concept to the community setting. However, sustained change in overall community practice in Australia will also depend on the rate at which practising pharmacists individually respond to the forces driving changes in professional practice. The U.S. experience in the implementation of pharmaceutical care provides evidence that government, professional groups and academic institutions are influential in initiating a practice trend but at the same time, shows the maximum extent of these external influences in sustaining the change. In this decade, research in pharmacy practice still grapples with the fact that the majority of pharmacists are slow to adapt to professional change.

2.4.3 Problems in implementation

Ideally, pharmaceutical care should permeate into other areas of pharmacy practice, however, this has not been fully realised. To date, community or retail pharmacy practice has neither paralleled the extent and rate of patient-oriented practice nor has it covered the range of clinical services of its institutional counterparts. Even the U.S. government's mandate to increase drug use evaluation, patient counselling and documentation through the 1990 Omnibus Budget Reconciliation Act (OBRA '90) had not significantly improved patient-oriented care in the community setting (De Young 1996a; Rumore et al. 1995; Rankin 1994). Some studies partly attributed this limitation to lack of evaluation data regarding the impact of community pharmacists' interventions on medication use as well as the lack of information about pharmacists and their willingness to assume additional responsibilities prior to the legislation's initial implementation (Pendergast et al. 1995; Hansen and Ranelli 1994; ASHP 1994; Reutzel 1994).

Succeeding studies also revealed that a majority of pharmacists were aware and accepting of the concept of patient-oriented care, however, a number of external impediments to creating and sustaining change in practice exist such as the lack of time, expertise, of acceptance by and co-operation of other health professionals, remuneration for value-added services, access to patient medical information and moral support from owners/employers (Schommer and Cable 1996; Odedina et al. 1995; Wilson and Whelan 1995). Internal barriers relating to pharmacists' personalities, perception of roles and care implementation, low confidence in their own competence and reduced motivation to perform care tasks were also mentioned as being responsible for the limited success of past attempts to modify pharmacists' practice (Campagna and Newlin 1997; Odedina et al. 1995).

The characteristics of the community practice setting tend to influence the extent and quality of pharmacists' drug therapy intervention. Employer expectations, staff limitation, lack of space, pattern of work, volume of prescriptions, and the nature of relationships with other health professionals in the community are some of the limiting factors inherent in the community setting (Campagna and Newlin 1997; Schommer and Cable 1996; Sisson and Israel 1996; Wilson and Whelan 1995). A community pharmacist in either independent or chain pharmacy devotes 43-60% of his/her time to professional activities in contrast with about 80% of a hospital pharmacist' s time. Administrative and customer-based duties were found to equally occupy community pharmacists' time (Reutzel 1994; Smith 1988). These characteristics are similar to the findings about Australian community pharmacy practice. A typical community pharmacist works about 47-56 hours a week and on a daily basis, dispenses about 60-80 prescriptions, spends less than 2 hours counselling patients and devotes the rest of the time overseeing the business and the staff. A majority of these pharmacies are staffed by one full-time pharmacist and two full-time shop assistants (Krass et al. 1991; Ortiz et al. 1984). While this example of practice may not favour patient-oriented care, there are a few community pharmacy models in the USA which are successful in implementing pharmaceutical care.

Family PharmaCare, a model pharmacy practice in Indiana, was able to transform its physical layout, range of services provided, the care process and most importantly, the pharmacist's relationship with patients towards pharmaceutical care (American Pharmaceutical Society and the Pharmaceutical Society of Australia 1996).

2.4.4 Educational and Research Implications

Farris and Kirking (1993) stated that the effectiveness of pharmaceutical care as a new professional mission and philosophy will have to depend on whether the majority of pharmacists could adopt such principles in their practice. However, as it is a new direction of practice, certain areas of difficulty will be encountered even by those pharmacists who are motivated to change their performance. While some of these areas could be addressed by changes in the workplace, others have to be addressed by professional and academic groups. Pierpaoli (1995) stressed that "it is crucial that the pharmacy practice and education communities cooperate to prepare pharmacists to function in the changing health care system".

Current research on care implementation identified common barriers in the implementation of new practice which could be channelled to education providers and practice researchers. They could focus their intervention to enhance knowledge, understanding and skills among pharmacy practitioners.

In connection with pharmaceutical care and the OBRA '90 implementation, Richards and Blank (1997) studied the educational needs of community pharmacists in five U.S. states in drug use review (DUR) and patient counselling. The pharmacists expressed confidence in performing 43 of 60 tasks involved in DUR. However, it was found that the recording, maintenance and utilisation of patient data and the communication with other health providers and patients were areas where a majority of pharmacists lacked self-confidence. Several findings on knowledge and skill needs led to the following recommendations by the researchers:

- Curricular-based continuing education programs on topics like therapeutics should remain available to pharmacists. Perhaps focused programs which

include the pathophysiology and therapeutics of major diseases accompanied by a distinct focus on pharmaceutical care delivery would be key alternatives. It would include the attention to communication and data acquisition and use indicated as needs by the pharmacists.

- Providers of continuing education should identify those disease states pharmacists encounter most often and provide the opportunity to acquire the knowledge and skills necessary to manage patient care. The pharmacist must then apply the knowledge and skills in practice and assess the results.
- Programs which help pharmacists learn how to provide pharmaceutical care and possibly to develop niches in the market will help refocus pharmacists.
- Programs should be developed to demonstrate patient data monitoring in drug therapy management systems. Pharmacists must learn to acquire, record, and use efficiently the data integrated in a patient record to effectively monitor drug therapy.
- Continuing education providers should develop programs for the pharmacists... described as the majority adopters with the hope that the laggards would also participate. Planners would use the positive base to help address pharmacist's identified needs to help them address new strategies emerging in practice (Richards and Blank 1997).

In their study of pharmaceutical care practices among Ohio pharmacists, Schommer and Cable (1996) identified four dimensions of pharmaceutical care practice: drug information source, information gathering, patient counselling and drug monitoring. They found that a majority of respondents engaged in passive (drug information source and information gathering) rather than active care activities (patient counselling and drug monitoring): less time was spent in activities requiring patient contact and anticipation of future problems. Another study reported that while pharmacists in the study performed at all levels of the hierarchy of decision-making in the care process, a majority seemed to perform at the submissive level. This is the level at which the pharmacist accepts the decision of others without question except to clarify interpretation (Campagna and Newlin 1997). Unfortunately, the submissive level is the lowest level and the least influential of all four decision-making levels (submissive, corrective, consultative and prescriptive) (Campagna 1995).

Odedina et al. (1995), in their study of the characteristics of providers and non-providers of pharmaceutical care, found that these two groups of practitioners acknowledge the importance of competence as a facilitating factor and the lack of it as an inhibitory factor

in the provision of a patient-oriented practice. The need for skill-based continuing education was stressed in order for pharmacists to build their confidence in performing the new practice.

The preceding studies recommended, from an educational point of view, that pharmacy students and practising pharmacists require more training and motivation in professional socialisation, higher levels of decision-making and in prerequisite skills of pharmaceutical care. To achieve the enhancement of these skills, newer techniques to enhance patient counselling, drug monitoring and decision-making expertise are needed. Also, authors have identified educational and personal requirements facing community pharmacists who would like to adopt pharmaceutical care. Most of these requirements are summarised in Table 2.4.

Table 2.4. Identified educational and personal requirements of pharmaceutical care

Educational	Personal
• knowledge in therapeutics and disease states • documentation skills • cognitive skills (problem-solving skills, critical thinking skills) • communication skills • counselling skills • clinical and physical assessment skills • leadership skills	• willingness for professional change • ability to assume more demanding responsibilities • ability to care for patients' health concerns • desire for competence • professional self-confidence

(Campagna and Newlin 1997; Monaghan et al. 1997; Prosser et al. 1997; McDonough 1996; Sisson and Israel 1996; Kong 1995; Pauley et al. 1995; Wilson and Whelan 1995; Canaday and Yarborough 1994; Panton et al. 1994)

Identified gaps in pharmaceutical care provision as well as the educational and personal requirements of the practice should be addressed through appropriate interventions by professional groups and academic bodies. It is evident that undergraduate education is constantly being adjusted to professional practice needs and could be expected to ensure the quality of pharmacy graduates in the present and future decades. As for the majority of pharmacy practitioners, additional training has to come from various continuing education providers who provide adequate and appropriate training programs.

For pharmacy practice researchers, strengths and weaknesses of practice settings towards the implementation of a comprehensive pharmaceutical care should be investigated and disseminated for potential solutions to be explored. Campagna and Newlin (1997) also emphasised the need to look at the personal factors affecting individual pharmacists, in as much as "individual factors are within the control of a given pharmacist and therefore have a greater potential to effectively produce results than do those that are beyond his or her control". Such an approach was expected to liberate individual pharmacists from the prevailing perception that their performance is mainly determined by the external setting where they are, rather than by their autonomous choices.

CHAPTER 3

Patient Counselling in Community Pharmacy Practice

3.1 Introduction

In principle, the pharmacy profession has always recognised its social mandate as a public guardian and a health care provider in drug therapy. Duty towards the patient is a primary component embodied in pharmacy codes of ethics in most Western countries and has been reflected in standards of practice statements for both community and institutional pharmacy practice. Despite this apparent pledge of duty, the social accountability and responsibility for the public health role has only been extensively endorsed within the profession through the recent adoption of 'pharmaceutical care' as a mission and practice concept. Traditional professional roles are being re-oriented and re-defined towards patient care and one of these roles is patient counselling. As mentioned in Chapter 2, patient counselling is one of the skill components of pharmaceutical care which has to be addressed if the goals of pharmaceutical care are to be achieved.

There are many terms used in research to refer to patient counselling. It is alternately used in the literature with patient medication counselling, advisory activity, consultation practice, patient information, drug information, cognitive service, among others (Miilun et al. 1995; Juergens and Basara 1994; Schommer 1994; Raisch 1993a; Troein et al. 1992; Berardo et al. 1989). With the ongoing emphasis on the 'patient' component of the practice, patient counselling also constitutes most of what is known as the 'pharmacist-patient communication' and closely interrelates and overlaps with patient education (ASHP 1997; De Young 1996a). While 'pharmacist-patient communication' may be considered the most appropriate term to imply the interpersonal nature of communication, the term 'patient counselling' will be used most frequently in the present work.

The present work will not cover the actual interaction between the pharmacist and the patient but will utilise the findings of 'pharmacist-patient communication' studies to identify and isolate skill components which in turn, could be incorporated in educational intervention. In addition, the term 'patient counselling' is more familiar to pharmacy practitioners when referring to their professional interaction with the patient (De Young 1996a). Through the years, researchers used several terms to refer to the same process but this did not deter them from (1) establishing certain structural and process attributes of patient counselling and (2) acquiring baseline information about the patient counselling views and practices among pharmacists.

3.2 Conceptual Views of Pharmacists' Patient Counselling

3.2.1 Drug-oriented or objective counselling

Pedersen and Schulz (1990) were able to identify two dominant views of pharmacists' patient counselling. The first view is that it is the provision of factual, objective and drug-oriented information by a pharmacist to a patient. According to this view, the provision of drug-specific information to a patient, in verbal or written form, would suffice to perform counselling and that the pharmacist has to convey the same elements of counselling per counselling episode regardless of patient characteristics. Reflections of this view were noted in the earlier assessment of pharmacists' patient counselling in which focus has been given to the amount and the time spent by pharmacists in giving drug information instead of describing the quality of communication between patients and pharmacists. In those studies, the greater the number of information items imparted and the longer the time spent in counselling seemed to give the impression of satisfactory counselling performance (De Young 1996a; Schommer 1994; Krass et al. 1991; Ortiz et al. 1984; Garde and Benrimoj 1982).

3.2.2 Patient-oriented or subjective counselling

In contrast, the second view postulates that patient counselling is the provision of advice based on the subjective and patient-oriented reasoning of a pharmacist. With this view, (1) the counselling role of the pharmacist is perceived to extend beyond the provision of factual information, (2) counselling may include advice and assessment based primarily on patient-specific variables and (3) the amount and content of counselling will vary according to the situation (Schommer 1994). This view seems to predominate in recent studies dealing with pharmaceutical care practice and is also in agreement with the prevailing biopsychosocial medical paradigm in health care (Chapter 2). It is envisaged that through individualised patient-oriented counselling, a pharmacist can contribute more to the attainment of positive health outcomes and a better quality of life for a patient.

The importance of establishing a distinct, definitive concept of counselling is not only relevant to practice issues but has also been considered to direct, or at least influence, the approach and the methods of, and type of data to be acquired in, patient counselling research (Temple 1997). It is, therefore, of utmost importance to clarify the definition and the scope of patient counselling according to the view being taken.

3.3 Operational Definition and Scope of Patient Counselling

3.3.1 Definition

In line with the discussion in Chapter 2 and the re-orientation of the pharmacy profession, the second conceptual view identified by Pedersen and Schulz (1990) is being adopted in this work. The term patient counselling will be used to accommodate all pharmacist-patient interactions concerning medications and, in some cases, may include other aspects of health care associated with drug therapy. The definition of patient counselling will be limited to *any face-to-face verbal communication between a pharmacist and a patient (or agent of the patient; hereafter referred to as patient) about medications or health usually occurring during*

the dispensing of a prescription and may also include the provision of written information in conjunction with the verbal interaction (Schommer and Wiederholt 1994). This operational definition may exclude modes of communication which do not require the actual presence of the patient, for example telephone and internet counselling, unless used as an adjunct to the verbal interaction provided.

3.3.2 Scope

The *scope* of patient counselling in this work may include any drug-specific, patient-specific or disease-specific information or their combination which the pharmacist and/or patient considered important and necessary. Some drug-specific elements of counselling are:

- tradename, generic name, therapeutic class and efficacy
- use, action and onset of action
- route, dosage form and proper storage
- dosage, frequency of intake and duration of therapy
- directions for preparation and/or administration
- action to be taken in case of a missed dose
- precautions to take while on medication
- common side and severe adverse effects and actions to minimise them
- techniques for self-monitoring
- potential drug-drug, drug-food, drug-disease interactions and contraindications
- medication's relationship with radiologic and laboratory procedures
- proper storage of medications
- proper disposal of contaminated, discontinued medication or used administration devices and
- any other information unique to an individual patient or medication (ASHP 1997; Schommer 1994).

Additional content may be appropriate when pharmacists have defined responsibilities in collaborative disease management for specific categories of patients. Disease-specific information may include:

- the disease state (pathophysiology)
- expected effects of the disease on the patient's normal daily living
- recognition and monitoring of disease complications
- other aspects that are useful to disease management such as non-drug therapies

Patient-specific information, which could be obtained from the patient, their prescriber and from the prescription may include: name of patient, age, gender, known allergies to medication, other medications taken, medical conditions, pregnancy and lactation, consumption of alcohol, current weight and special current diet restrictions which may be affected by the drug regimen in focus (Richards and Blank 1997; USP Dispensing Information 1994).

3.4 Patient Counselling as a Component of Pharmaceutical Care

In essence, the prominence of patient counselling in the pharmaceutical care process has revolutionised the patient counselling concept itself and has differentiated it from the objective, drug-oriented notion which many pharmacists and researchers were more accustomed to, prior to the introduction of patient-centred care. The 'care concept' has affected patient counselling in many ways:

- It highlights the professional and social responsibilities of the pharmacist in achieving positive health outcomes and improving the quality of a patient's life through their counselling intervention (Herrier and Boyce 1995; Manasse 1992; Hepler and Strand 1990)
- It clearly emphasises that patient counselling is a collaborative process and that its provision to an individual patient is complementary with those provided by other health care professionals (Canadian Medical Association and the Canadian Pharmaceutical Association 1996; Perri 1996; Smith 1996)
- It provides a systematic means of assessing the structure, process and outcomes of, and sets the standard for pharmacists' counselling intervention on the basis of quality, appropriateness and responsiveness to patient's needs (Richards and Blank 1997; Mullins et al. 1996; Sisson and Israel 1996).
- It has established a new perspective of patient counselling which is therapeutic and relationship-based (McDonough 1996).

- The patient-oriented pharmacy paradigm and practice has facilitated a new trend of research on counselling intervention of pharmacists which coincides, and is in agreement with the prevailing 'biopsychosocial' medical paradigm and the 'people empowerment' concept and thus deviates from the 'provider-centred' provision of health care (Herrier and Boyce 1995).
- It is influential in extending a pharmacist's perception of his/her responsibility in drug therapy from episodic patient encounters to constant monitoring of the patient's therapeutic needs and health condition, when applicable (Manasse 1992).
- It places the patient as a person at the centre of the therapeutic process and for whose welfare the pharmacist's counselling in conjunction with other health care interventions is aimed at (Chewning and Sleath 1996).
- On a long-term basis, the positive health outcomes of a consistent and widely applied patient-oriented practice of counselling will not only sustain the existence of the pharmacy profession but will also help the members of society to rely on pharmacists for their health care needs (Herrier and Boyce 1995; Manasse 1992).

As a pharmaceutical care component, patient counselling is valued for its contribution in preparing and motivating patients to follow their pharmacotherapeutic regimens and monitoring plans (De Young 1996b; Schommer and Cable 1996). As such, it is described as an *active* component of care, meaning that it requires the direct interaction of a pharmacist with a patient. An illustration which may describe the new concept of patient counselling in community pharmacy setting within the pharmaceutical care framework is provided in Figure 3.1. This illustration shows that although the core of a community pharmacist's counselling is drug therapy and its problems, the establishment of a relationship with a patient and an exchange of information regarding his/her medical conditions and existing therapeutic management are considered essential in deciding appropriate drug use interventions. The depth of counselling, on one hand, will have to depend on patient-related factors such as a patient's preference for information, his/her extent of knowledge about the medical condition and its management, and specific drug and health care needs identified through the interaction, among other things (Schommer et al. 1995; Juergens and Basara 1994; NABP 1994; Culbertson et al. 1988).

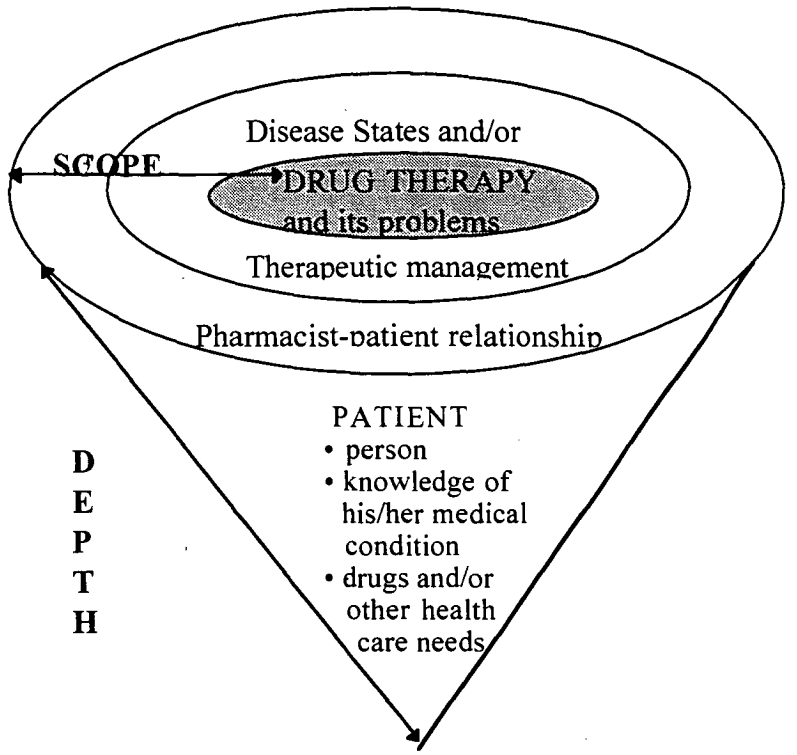


Figure 3.1 Scope and depth of patient counselling in the pharmaceutical care framework

At present, certain practice standards or guidelines are set by pharmacy organisations to specify the scope of pharmacist-conducted patient counselling (ASHP 1997; CMA-CPhA 1996; Kelly 1996; PSA 1996; CPhA 1992). The American Society of Healthcare Pharmacists guidelines, for example, describe a patient-oriented counselling that involves the following basic steps:

- establishment of a caring relationship with patients as appropriate to the practice setting and stage in the patient's health care management (e.g. explanation of care and self-introduction)
- assessment of the patient's knowledge about his/her health problems and medications, physical and mental capability to use the medications appropriately and attitude towards the health problems and medications. In case of repeat prescriptions, the pharmacist should be asking the patient 'to show and tell' how they use their medications
- provision of information orally and the use of aids and demonstration to fill patient's gaps in knowledge and understanding and in case of identified medication problems, adjusting the pharmacotherapeutic regimens according to protocols or by notifying the prescribers and

- verifying whether the patient has known and understood the medication use (ASHP 1997).

Guidelines, such as the previous example, have emphasised the relational component of counselling and the need for the pharmacist to determine the scope and depth of counselling in accordance with a patient's health and information needs. The scope and depth have to depend on the pharmacist's assessment of a patient's existing knowledge, prevailing attitudes and concerns about medications and health in general.

3.5 Importance of Patient Counselling in Community Pharmacy Practice

Patient counselling is one activity, other than primary health care, that the government has formally recognised through recent legislations such as the OBRA '90 in the U.S., the Australian Medicinal Drug Policy and the Patients' Charter in the U.K. (Graham 1995; Rumore et al. 1995; Passmore and Kailis 1994; Hargie et al. 1993). Through these policies, the pharmacist is given direct public responsibility in the quality use of medicines and is regarded as one health professional whom the public can rely on for their health information needs. As mentioned previously (Chapter 2), the Australian government has involved community pharmacists in medication management, drug review services in homes and residential care areas and some pharmacists are also taking part in different collaborative health programs in the community setting which not only promote public awareness about the health care role but also increase patient-pharmacist contact regarding the use of medications (Emerson 1997; Bronger 1995). The number of pharmacists involved in these innovations is rather limited; a greater number of pharmacists are practising within the confines of a traditional community pharmacy where the main encounter with the patient is associated with the dispensing of either non-prescription or prescribed medications. The re-orientation of pharmacists' counselling towards the patient in these pharmacies is important for the following reasons:

- more pharmacists in Western countries are working in the community practice setting than in any other work setting (Salaried Pharmacists' Association 1997; Kennedy 1975)
- these pharmacists encounter various types of patients, many of whom are involved in various stages of care such as those practising self-care and those with acute and chronic medical conditions (Herrier and Boyce 1995; Marklund et al. 1990; Morrow and Hargie 1987)
- the number of prescriptions processed in the community pharmacy, corresponding to a large number of patients, exceeds those in institutions and therefore, a greater need for pharmacists' counselling exists (Morrow and Hargie 1992)
- many community pharmacists are in need of training and experience in patient-oriented care (Campagna and Newlin 1997; Richards and Blank 1997; Schommer and Cable 1996)
- pharmacies are most accessible to the community to provide intervention at the primary and secondary levels of care (Lien and Lien 1994) and
- the increasing trend towards de-institutionalisation of health care will ultimately place greater responsibility on the community pharmacist who has to be prepared for this new health care task (Lancaster 1996).

3.6 Characteristics of Community Pharmacists' Patient Counselling

For the last three decades, research on patient counselling has flourished in Australia and other Western countries. Earlier studies were mainly devoted to (1) the level of participation in patient counselling activities of community pharmacists in a chosen population or geographical area, (2) the identification of the structural components constituting pharmacists' counselling and (3) the determination of the amount of counselling provided by community pharmacists.

3.6.1 Daily level of performance

Patient counselling usually occurs with the dispensing of prescription medications and to a lesser degree, with the sale of non-prescription items. A study showed that 16% of the work activities of U.S. community pharmacists was devoted to patient care, however, the time spent was not specified (Smith 1988). In Ireland, community pharmacists spent 5.8% of their professional time communicating with patients compared to 4.8% in Canada (Fisher et

al. 1991; Boyd et al. 1982). In Australia, the mean counselling rate is 15-20 events per day with an average length of 2-3 minutes per counselling episode (Ortiz et al. 1992). Most of these studies described how more than two-thirds of a pharmacist's working hours were spent on administrative or other activities not related to patient care. However, a New Zealand study reported that pharmacists spend 53.8% of their time on professional activities, half of which is devoted to traditional dispensing (Jefferson and Emmerton 1994).

3.6.2 Characteristics

Common descriptive characteristics of pharmacists' counselling which were taken up in previous works were:

- content (specific elements of information given) per counselling event
- amount (number of elements of information provided) per counselling event
- time allotted for individual patients (in minutes)
- number of patients counselled per day (number counselled over the number of dispensed medications)
- type of patient counselled (gender, age, social benefit category, regularity of visit)
- the nature of prescription (new, repeat) and
- type of medication for which counselling is offered.

The measurement of these components enabled the description of the magnitude of counselling performed by community pharmacists. In surveys involving pharmacists or patients, a majority of pharmacists provide label information such as dosage instructions (size and number of doses per day) and explanation of ancillary, cautionary or advisory labels of a medication (Stratton et al. 1993; Ortiz et al. 1984; Garde and Benrimoj 1982). Succeeding studies concluded that pharmacists seldom extend their counselling to cover other aspects of drug therapy such as drug action, side-effects, storage conditions and instructions on the use of special dosage forms which may be important for some patients (Lyons et al. 1996; Lam and Krass 1995; Gowan et al. 1994; Blom et al. 1993). However, it was also reported that a

number of pharmacists gave advice on other issues such as medical problems, first aid, general health matters and personal problems, among others (Krass et al. 1991; Ortiz et al. 1984).

Regarding daily frequency, there was observed variability in the number of people counselled in pharmacies, ranging from 35-70% of dispensed prescriptions in a day (Lam and Krass 1995; Raisch 1993b; Mason and Svarstad 1984; Garde and Benrimoj 1982). This was also reflected in the dispensing of non-prescription medication in which only 7-40% of consumers were given advice by pharmacists (Taylor and Suveges 1994). Those patients who received more counselling were women, regular customers, those with new prescriptions, and those who were suffering from acute medical conditions (Raisch 1993b; Ortiz et al. 1989; Ortiz et al. 1984).

The amount of information given was more likely within the range of 2-4 elements per counselling event, with a time allotment range of 2-4 minutes (Schommer and Wiederholt 1994; Berardo et al. 1989; Morrow et al. 1993; Fisher et al. 1991; Ortiz 1990; Ortiz et al. 1989; Garde and Benrimoj 1982). The amount and length of time spent by a pharmacist per counselling event seemed to vary with a number of factors: nature of prescription, type of medication, volume of prescription and some patient characteristics (De Young 1996a; Schommer and Wiederholt 1994; Taylor and Suveges 1994; Raisch 1993b; Blom et al. 1993; Morrow and Hargie 1992; Ortiz 1990).

3.7 Factors affecting Patient Counselling by Community Pharmacists

3.7.1 Workplace-related factors

Relationships between counselling and characteristics of pharmacies were explored in numerous studies. Some pharmacy-specific characteristics which were documented to influence the provision of counselling are:

- community practice setting (e.g. chain or independent)
- payment methods or financial remuneration (e.g. self-paying, government subsidy)

- number of personnel and associated workload
- volume of prescriptions
- physical layout and
- availability of resources.

3.7.1.1 Practice setting

The effect of community practice setting varies among studies. According to some studies, pharmacists in independent pharmacies provided more counselling than those in chain setting (Briesacher and Corey 1997; Juergens and Basara 1994; Schering Laboratories 1994). This was associated with greater rapport of pharmacists with their patients and the local physicians. These independent pharmacies also placed greater emphasis on personalised service (Briesacher and Corey 1997; Sisson and Israel 1996). Raisch (1993b), in contrast, reported that U.S. chain pharmacies had a higher rate of pharmacist-initiated counselling. However, he related that increased counselling was only for self-pay patients. Payment methods which guaranteed higher financial incentives tend to encourage pharmacists to provide more counselling to patients.

3.7.1.2 Payment methods or financial remuneration

Davies (1994) mentioned that provision of cognitive services might be an area of conflict for pharmacists who depended on the volume of prescriptions for remuneration. The issue of financial remuneration in community pharmacy practice in Australia is tied up with the dispensing of medications under the Pharmaceutical Benefits Scheme (PBS), in which the pharmacist is paid by the government for the supply of certain pharmaceutical benefits to Medicare beneficiaries upon the presentation of the prescription (Demirian 1997). The current amendment to the National Health Act recognises pharmacists' substantial input into the dispensing of PBS medicines and also acknowledges the need to practise according to a defined standard (Kelly 1996). It is expected that, with better standards of practice in the community pharmacies, unnecessary consumption of medications in the community will be

minimised. The effects of PBS changes will be monitored by the Pharmaceutical Society of Australia (PSA) particularly on prescribing patterns and possible adverse health effects on members of the population who can not afford to pay for more expensive medications (PSA 1997). While there has been a recent increase in PBS dispensing fee, an additional 5 cents to $ 4.34 for ready prepared items and a 7 cent rise for an extemporaneous item to $ 6.20, it is not known whether it is enough incentive for pharmacists to perform up to the expectations set by the government (Demirian 1997; Kelly 1996).

3.1.7.3 Personnel

The limited number of personnel and excessive workload were cited to negatively affect patient counselling by pharmacists (Rumore et al. 1995; Raisch 1993a; Laurier and Poston 1992). Without proper support staff, pharmacists had to attend to providing non-professional services (Odedina et al. 1995). In addition, Mason (1983) found that a high pharmacist/technician ratio correlated significantly with the pharmacist's approachability in counselling.

3.7.1.4 Volume of Prescription

The volume of prescriptions processed per day has an inverse relationship with the amount of cognitive services pharmacists can provide (Schommer and Cable 1996; Sisson and Israel 1996; Mottram et al. 1995; Ortiz et al. 1984). Pharmacists who are providers of patient-oriented care reported that having a low to moderate prescription volume helped in their provision of professional services (Odedina et al. 1995). As for other pharmacists, counselling time is inadequate whenever workload, in terms of prescription volume, increases. In some cases, pharmacists relied solely on the provision of written information to fill in for verbal counselling (Schommer and Wiederholt 1994).

3.7.1.5 Physical layout

An earlier study did not consider that physical layout of the pharmacy is a deterrent in the provision of counselling (Kirking 1982). In an Australian study, there are more people (38%) who thought that having a private area for consultation makes no difference in their decision to discuss health matters with a pharmacist than those who regarded privacy as a necessity (32%) (Heffernan et al. 1993). However, more recent works indicated the lack of a suitable counselling area as inhibiting pharmacists' counselling and discouraging patients from taking up sensitive health issues in a common pharmacy setting (Mottram et al. 1995; Odedina et al. 1995; Wilson and Whelan 1995; Herrier and Boyce 1994b; Schommer 1994). In a study involving patients, between 26-55% were willing to pay for a pharmacist's counselling service provided that the information given is tailored to individual needs and is made available in a private or semi-private setting (Carroll 1985). This finding was also supported by Spaulding (1988) who reported significant relationship between the patients' avoidance of a doctor's visit and their acceptance of a private consultation with a pharmacist and their willingness to pay for the service.

3.7.1.6 Resources

To a limited extent, the availability of resources is also considered a factor in providing counselling (Potter and Black 1994; Schommer 1994). Juergens and Basara (1994) reported that pharmacists did not have adequate tools to supplement verbal counselling especially when encountering a broad range of patient needs in the community setting. Adequate resources for counselling such as computerised patient profiles, information leaflets and good support staff have been identified by pharmacists as facilitators of counselling (Schommer 1994).

3.7.2 Pharmacist-related factors

3.7.2.1 Demographic characteristics

Length of practice

Older pharmacists or those who have more years of practice were found to be less likely to offer counselling than their younger counterparts (De Young 1996; Mason 1983). Juergens and Basara (1994) reported that pharmacists who have been in practice five years or less had a more positive attitude towards counselling than pharmacists who have practiced for more than 30 years. Ortiz (1990) also found that older pharmacists tend to indicate that explaining about drug action was more of a doctor's responsibility than a pharmacist's. In terms of length of practice, pharmacists who had practised longer tend to be less confident concerning their ability to provide cognitive services than those with less practice experience (Richards and Blank 1997).

Job position

The nature of job position also created variability in views about counselling. Staff pharmacists tend to identify more barriers to counselling than managing pharmacists (Schommer and Wiederholt 1994; Savage 1996). Managing pharmacists, on the other hand, rated the frequency with which they participated in patient counselling and drug monitoring higher than did staff pharmacists (Schommer and Cable 1996). Pharmacists who hold staff positions, who have shorter length of practice and who practised in high-volume pharmacies are more likely to give greater importance to both oral and written counselling than those pharmacists in management position.

Gender

A review of health communication and gender found that there is a lack of research using gender as a meaningful variable of health communication (Gabbard and Anne 1995). In

pharmacy, gender has been included in many studies, however, there is very little known about specific studies which looked at gender differences and pharmacist-patient communication. Even a recent review of research on pharmacist-patient communication in North America, has concluded that gender did not affect the quality of pharmacists' counselling over non-prescription medications (De Young 1996). However, the work of Beck et al. (1994) has found that gender influences the level of comfort of the pharmacist in giving advice to both sexes. It was concluded in this study that there is greater degree of comfort when advice is given to a patient with the same gender as the pharmacist, especially when discussing sensitive and non-sensitive issues.

While numerous studies on the nature and the quantity of pharmacists' patient counselling have provided baseline information as to what constitutes the process, they have not provided explanation for the observed variability in the levels of counselling performance among pharmacists. Another research trend in pharmacy practice is aimed at analysing and understanding the psychological make-up and individual characteristics of pharmacists, particularly their knowledge, attitudes and skills which are expected to explain the observed differences in counselling views and behaviours.

3.7.2.2 Personal Attributes

Knowledge

Expertise has been defined as "the confident and automatic application of knowledge and skills that have been developed and refined through experience" (Campagna and Newlin 1997). Pharmacists are known for their expertise in drug therapy on the basis of their initial pharmacy education and training. However, acquired knowledge could change through time depending on many factors. The lifelong learning that takes place after initial professional education greatly depends on an individual's initiative and motivation to enhance his/her knowledge and practice experience. At present, there is no information regarding the general level of professional knowledge among community pharmacists; nor is it possible to have a

standard method of assessing how much knowledge they should possess in order to provide adequate patient counselling. The literature, though, has provided indicators of educational needs of pharmacy practitioners through self-reported training needs, self-assessment of competence, held opinions and views on practice issues, and also, reported incidents of incompetence (Richards and Blank 1997; Wilson and Whelan 1995; Odedina et al. 1995; Hayes 1994).

In view of practice re-orientation, many pharmacists in Western countries, both providers and non-providers of pharmaceutical care in community practice, were reported to recognise the need for additional knowledge and skills (Herrier and Boyce 1995; Odedina et al. 1995; Wilson and Whelan 1995). Benson and Cribb (1995) mentioned that, although pharmacists in their study were clear about their role in giving advice to patients, they were uncertain about their educational orientation, particularly being biomedical and functionalist. Concern was expressed on areas or topics which are patient-, drug- or disease-specific and which are expected to enhance the quality of information provided in counselling: therapeutics, disease states, pharmacokinetics, counselling methods, drug interactions, pharmacology, among others (Richards and Blank 1997; Schommer and Cable 1996; Herrier and Boyce 1994a). The observed lack of confidence among pharmacists in performing patient-specific functions, including patient counselling has been ascribed to (1) a lack of knowledge and skills on how to perform these tasks and/or (2) specific attitudinal/motivational factors (Richards and Blank 1997; Odedina et al. 1996).

Attitudes

Attitudes and subjective norms were the first identified predictors of a pharmacist's counselling behaviour in the form of behavioural intentions. Mason (1983) explained that a behavioural intention to perform a specific behaviour is made up of the individual's attitude towards performing that behaviour, and the individual's perception of the social norm with respect to that behaviour. Consistent with this argument is the Pharmacists' Implementation

of Pharmaceutical Care (PIPC) model developed by Odedina et al. (1996) which relates attitude, social norm and perceived behavioural control to pharmacist's intention to try. This behavioural intention, together with past behavioural control and past behaviour recency, could actually lead to a desired behaviour (eg. provision of pharmaceutical care). The factors which impinge on a pharmacist's intention to try may also be the 'work motivation' described by Pinder (1984) as "a set of energetic forces originating both within as well as beyond an individual's being, to initiate work-related behaviour and to determine its form, direction and duration". Work motivation has been strongly linked to work performance (Kanfer 1990).

Positive attitudes of pharmacists towards drug therapy outcomes, improved patient-pharmacist relationship, reduction in health care costs, re-professionalisation of pharmacy, professional fulfilment and improved professional relationships with other health care providers were all identified as facilitators of practice behaviours (Odedina et al. 1996; Basara 1994; Juergens and Basara 1994; Schommer 1994; Blom et al. 1993; Bond et al. 1993).

Pharmacists' willingness to assume professional responsibility such as counselling and documentation under the OBRA '90 was also linked to their favourable attitude towards voluntarism as a social responsibility (Hansen and Ranelli 1994). Pharmacists who have a positive attitude towards the counselling role and who were also satisfied with their current jobs were more likely to participate in the improvement of patient care (Pendergast et al. 1995; Juergens and Basara 1994; Ortiz et al. 1992a). The extent to which pharmacists provided verbal counselling has also been found by Mason and Svarstad (1984) to correlate most positively with their general counselling attitude, also known as counselling role orientation (CRO). This was supported by the findings of Ortiz et al. (1992) who also noted that, on the basis of behavioural expectations, Australian pharmacists' orientation towards counselling created variability in their assumption of a counselling role.

More recently, De Young (1996b), using qualitative research methods, concluded that U.S. pharmacists in his study have not reached a conclusion as to the definition, purposes and outcomes of patient counselling. Some pharmacists believed that patient counselling and OBRA '90 are synonymous and that patient counselling is only about the provision of information on prescription medications; other pharmacists took a more comprehensive view and believed that patient counselling involves 'whatever it takes' to fulfil the patient's information needs. Similar divergent views of pharmacists were noted in a U.K. study which also used the same research method. Pharmacists tend to be confused with the terms 'advice' and 'counselling' and therefore, the understanding of counselling as 'polite telling' or merely the giving of specific advice or instruction is evident in the statements of some pharmacists (Benson and Cribb 1995). These issues, according to Benson and Cribb (1995), influence the manner in which pharmacists communicate with their patients.

Perceptions

In a separate study, Ortiz (1990) noticed the part played by pharmacists' perceptions in their counselling performance. Perception, which is the "internal processing of information about the internal and external environment, including other people and the messages that they transmit" can be decoded and acted upon through making judgements and decisions in relation to the goals being sought (Hargie et al. 1994). Lilja and Larsson (1993) studied Finnish pharmacists' perception or "mental mirrors" of patients' need for information using patient video-vignettes. They found that pharmacists tend to harmonise their own perception of their patients' need for information with those of the patients'. Pharmacists' judgement of a patient's need for emotional support tend to have a strong positive relationship with their judgement about their general information needs. Customers who are presumed to be independent were given more information about side effects and alternative preparations than the others. In an Australian study, pharmacists' perception of patients' need was also significantly related to the number of patients counselled (Ortiz 1990).

A study of various criteria used by pharmacists in deciding the amount and content of their counselling revealed that patient motivation, exemplified by desire for information and perceived familiarity or experience with medications, is a major criterion used along with type of medication and patient abilities (Schommer and Wiederholt 1994). Significant differences in the type and frequency of counselling for newly prescribed medications and for chronic medications were also noted; patients who received new prescriptions were given more counselling by pharmacists (Lam and Krass 1995; Schommer and Wiederholt 1994; Ortiz 1990).

Perception of physicians' and other health professionals' recognition and acceptance of their pharmaceutical care role has been identified by pharmacists as a factor hindering their assumption of greater responsibility in patient care (Whelan and Wilson 1995). Negative perception had also prevented some pharmacists from providing more counselling for fear of litigation or conflict with prescribers (Herrier and Boyce 1994b). In some cases, this perception was also brought about by the actual lack of liaison with other health professionals in community practice (Morrow and Hargie 1992).

Perception of the counselling situation was analysed by Morrow and Hargie (1992) to affect the pharmacist's assessment of what and how much counselling to provide in addition to drug information. In their study, pharmacists identified several core situations where counselling is indispensable. The first ten in decreasing rank are: confusion over medication, medication problems in the elderly, anxiety over treatment, dissatisfaction over treatment, diabetic patients, patients with cardiovascular disease, dealing with adverse drug reactions, patients using inhalers and cancer patients. Pharmacists also provided more counselling with certain medications which they considered to have more potential adverse effects (Schommer 1994; Mason and Svarstad 1984).

Skills

A. Verbal communication

The possession of skills and knowledge are the two main elements of professional expertise. The skills requirement of patient counselling seem to have increased with the present trend towards patient care. Referring to Figure 3.1, a pharmacist's counselling intervention on drug therapy has to be based on a therapeutic relationship with the patient. This relationship could only be achieved by engaging the patient and other involved health professionals in a meaningful and effective interaction, using a variety of appropriate communication skills. These skills are indispensable in varied counselling situations; referral to, and discussion with other health professionals; consultation with another pharmacist; consultation with other drug information sources and provision of verbal and written drug information beyond that which is "usual and customary" for a routine prescription order (Rupp et al. 1988). Pharmacists' network of communication includes the pharmacy assistants and members of the public, comprising patients and non-patients; other health care professionals and associated health care workers such as medical receptionists, pharmaceutical and sales representatives (Morrow and Hargie 1987).

Regarding patients, the use of a "facilitative interactive counselling style" by a pharmacist enables patients to openly and freely negotiate for their own health needs whenever they are in a pharmacy (Morrow and Hargie 1992). More recent studies on actual pharmacist-patient communication yielded interesting results not found in earlier reports. The first systematic recording and micro-analysis of questioning performance of U.K. pharmacists yielded the following findings:

- A pharmacist asked, on an average, four questions per consultation as compared with 2.5 questions asked by clients.
- Only two percent of all pharmacist's questions addressed the psychosocial dimensions of practice, the vast majority were purely clinical in nature.

- 98% of questions asked were closed questions which followed the clinical algorithm approach of eliminative questioning for diagnosis.
- Over 60% of all closed questions were probe questions which indicated that pharmacists are often using questions to follow up information supplied by the client (Morrow et al. 1993).

Although the abovementioned findings may be insufficient to judge the adequacy or appropriateness of pharmacists' interviewing performance, it has provided insight into the actual interaction pharmacists are having with patients. Moreover, it was found that the pharmacists with the shortest consultation time asked the highest number of questions per interaction. The preponderance of closed questions in a pharmacist's interaction with patients was assumed to partly relate to presumptions of prior knowledge on the part of the person asking the questions. In the case of the pharmacist, such manner of question-asking could have the dual effect of (1) restricting the number of questions asked and (2) controlling the scope of any response considering the availability of time for the interaction. It was further argued by Morrow et al. (1993) that the nature of the interaction and its subject focus could have affected the time involved and the number of questions asked by pharmacists.

B. Non-verbal communication

Non-verbal communication by pharmacists is also taken as a cue by patients as to their availability to answer questions. When asked for reasons why they did not ask advice from the pharmacist during their purchase of non-prescription medications, some patients perceived that pharmacists were too busy to be asked (Taylor 1994). According to Taylor and Greer (1993), a patient's assessment of a pharmacist's actual or perceived social distance is expressed by the following terms: available, accessible and approachable and could be judged according to pharmacists' (1) physical presence, (2) capability of being reached, (3) ease in dealing with, conversing with, willingness to help and/or responsiveness. Their review of several studies showed that some patients had relative difficulty in obtaining medication-related advice from pharmacists but researchers were not able to provide the terms that will enable categorisation of the specific perception of social distance. It is one reason why it is

difficult to interpret previous reports on non-verbal aspects of pharmacists' counselling. Barnett (1993) stressed the importance of non-verbal communication of pharmacists. She stated that a 38% of understanding a message comes from the non-verbal tone of voice, 35% from facial expressions, posture and gestures, a larger percentage when compared to the spoken word. Pharmacists who are more expressive communicators are expected to increase their efficiency in communicating with patients. In fact, a study on consumer acceptance in which patients who perceived pharmacists as available by phone, easily approachable and able to give competent advice, were more likely to accept pharmacist's prescribing (Pennock 1987).

C. Empathy

One study had revealed that while the public highly rated pharmacists in terms of expertise and trustworthiness, they were judged lowest in empathy when compared to several sources of medication information – physician, family member, friend and colleague (Gore and Madhavan 1993). The Schering survey on the implementation of OBRA '90 in pharmacies also reported that only 43% of the people surveyed felt that "the pharmacist really cares about me and how I feel" (Schering Laboratories 1994). Empathy has been defined as "the accurate perception and identification of both the surface and underlying meanings in a person's statements – both the actual words and the feelings behind the words – and the ability to respond to those statements in a way that communicates that understanding convincingly" (Barnard et al. 1982). Empathy, together with expertise and trustworthiness, are measures of credibility. Credibility has its implication on consumers' willingness to pay for pharmacist's counselling services. In a study conducted by Gore and Madhavan (1994), it was found that consumers who preferred the counselling service perceived pharmacists to be more credible than consumers who did not.

D. Clarity and feedback

There is limited information on the clarity of pharmacists' verbal communication as received by patients among the studies reviewed in this work. Of the two studies which mentioned clarity, neither had explored the details of the interpersonal communication between the pharmacist and the patient (Schering Laboratories 1994; Heffernan et al. 1993). Also, there is not enough information on pharmacists' abilities to solicit feedback from patients. Feedback has been recognised as an important component of interpersonal communication as it enables one to check whether the sent message has been understood by the other person as intended. What has been revealed in some of the studies, however, was that pharmacists did encounter various difficult situations in their communication with patients. Ensuring patient understanding, dealing with patient's preconceived ideas, overcoming patients' communicative disabilities, getting patients to accept responsibility for their health, deciding depth of involvement, lack of background knowledge of the patient's situation, avoiding causing patient alarm and dealing with patients' worries are some of the most frequently reported counselling difficulties community pharmacists encounter in their daily practice (Morrow and Hargie 1992).

E. Communication difficulties

A comprehensive list of types and examples of communication difficulties, mostly in dealing with 'problem' patients (addicts, aggressive, anxious, confused, depressed, dishonest, distressed, embarrassed, foreign, geriatric, handicapped, illiterate, inquisitive, know all, other health professional, paediatric, shy, stubborn, among others) were identified by Morrow and Hargie (1987) and are presented in Table 3.1. These difficulties were not limited to purely clinical problems but also included educational, psychological and social dimensions of communication.

Table 3.1 Types of communication difficulties encountered with 'problem' patients

Non-verbal	Gathering and giving factual information	Evaluative	Miscellaneous
• recognising non-verbal behaviour • interpreting non-verbal behaviour • establishing and maintaining eye contact • providing instructions totally in writing • using and interpreting sign language	• questioning • explaining • listening • assertiveness • giving reassurance • reasoning • providing accurate information • obtaining feedback • extracting facts • not conflicting with doctor or other pharmacist's instructions • choice of language and terminology	• assessment of needs of patient • determination of the amount of information to be given • recognition of patient needs • assessment of patient understanding • follow-up assessment	• maintaining politeness • humouring the patient • providing patient satisfaction • time constraints for either parties • legal conflicts • ethical conflicts • financial conflicts • imparting confidence • diplomacy • alleviating embarrassment

(Morrow and Hargie 1987)

Interprofessional communication involving the pharmacist and the prescriber is another area which tests the communication skill of a pharmacist. A recent study by Chen et al. (1996) in Australia has provided detailed baseline information regarding communication occurring between pharmacists and physicians in the community setting:

- the overall rate of interprofessional contact was about one contact per 400 prescription items dispensed;
- 54.8% of contacts were initiated by pharmacist, 42% by physicians and 2.5% by receptionists;
- the median duration of contact was 52 seconds;
- 54% of contacts were clinical and 35.6% were of administrative nature and
- the most frequent clinical issue concerned the strength and dose of medications.

In this study, most interprofessional contacts related to a single issue and were focused on the supply of medications; only a few seemed to relate a medication to a patient's drug regimen. Many pharmacists, in this study, anticipated difficulty contacting general practitioners because of perceived unreceptiveness but the recorded telephone contacts seemed not to warrant the anxiety of pharmacists over physicians' unresponsiveness. Some of the pharmacists exhibited deference when initiating contact with a physician. The researchers did not explain the possible reasons for the manifested pharmacists' behaviours but mentioned that there is infrequent communication between pharmacists and prescribers.

While a majority of potential outcomes of patient counselling will depend on the pharmacist's interpersonal communication skills, there are other skills which are also expected of the pharmacists in order to perform the provisions and tasks created by government health programs (e.g. OBRA '90 in the U.S., Medication Review and Co-ordinated Care Programs in Australia) and the pharmaceutical care implementation. These skills are discussed in Chapter 2.

3.7.3 Patient-related Factors

Research has documented that many patient-related factors have their impact on health care utilisation. Some of these factors are: demographic characteristics, knowledge and perception of pharmacist's role and training, expectation and satisfaction with services, desire for information and question-asking behaviour.

3.7.3.1 Demographic Characteristics

Age

Some demographic characteristics of patients were found to relate to different aspects of pharmacists' patient counselling. A significant relationship between age and attitude towards patient counselling has been revealed in several studies, with younger clients more likely to exhibit a more favourable attitude than older ones (Lam and Krass 1995;). Seventy-nine

percent of elderly people in another study were unwilling to discuss medication-related issues with a community pharmacist and a majority (96%) expressed a preference to discuss these issues with their general practitioner (Jones et al. 1997). Respondents' age was also negatively correlated with their counselling role orientation which showed that older patients seemed not to have the intrinsic desire to know more about their medications than younger patients and therefore, this may affect their medication information-seeking (Schommer et al. 1995).

Gender

Women were also found to frequent pharmacies more than men and subsequently, a greater number of women were provided with counselling than men (Schering Laboratories 1994; Ortiz et al. 1989; Ortiz et al. 1984). Females were also found to have a greater positive attitude towards pharmacists' extended services than males (Lam and Krass 1995). The latter finding is in contrast with that of Bond et al. (1993) who concluded that more males are in favour of pharmacists' extended role when compared to females. Women were also reported to support payment for pharmacists' counselling more frequently than men and expressed their willingness to avail themselves of such service (Culbertson et al. 1988).

Educational Attainment

In terms of educational attainment, Heffernan et al. (1993) did not find any significant relationship with patients' perceptions of community practice. However, it was noted in their study that those who had completed tertiary education were less satisfied with the clarity and understandability of pharmacists' counselling. Fewer people in this group, when compared to those who had lower academic attainment, also expressed that the provision of medication information by pharmacists is helpful or important (National Association of Board of Pharmacy, 1994). With regards to preference for either verbal or written information, it seems that more high school (secondary school) educated respondents

preferred verbal information only while more of those who had university education preferred written information only (Culbertson et al. 1988).

3.7.3.2 Knowledge and perception of pharmacist's role and training

Credibility refers to "the inferences made by an observer concerning the believability of the speaker" which is not totally under the control of the speaker since a message may be thought of as highly credible by one listener but not at all by another (Hargie et al. 1994). As mentioned above, 'source credibility' hinges on the communicator's trustworthiness, expertise and empathy. Trustworthiness is often conferred to individuals who are perceived as honest, reliable, fair, truthful, having integrity and are 'safe' to talk to (Hargie et al. 1994; Tindall et al. 1989). Those patients who were found to frequently utilise the counselling services of pharmacists and were willing to pay for counselling services were also the same people who rated them higher in the aspects of trustworthiness and expertise (Gore and Madhavan 1994; Gore and Madhavan 1993). Perception of a person's trustworthiness and expertise is significantly influenced by knowledge of that person's occupation and background training (Swenson et al. 1984). It was found that about 50% of patients admitted that lack of awareness of the pharmacist's role and training had discouraged them from seeking medication information (Chewning and Schommer 1996). Stratton et al. (1993) reported that certain rural patients did not know that pharmacists received the training necessary for them to consult with physicians regarding drug therapy. These patients thought that physicians received more drug-related courses than pharmacists. Also, they did not consider that the pharmacist is a crucial link in the health care chain but rather a person to whom a physician or a dentist sent patients to receive medications.

A study of public perception of pharmacists' health care role in Tasmania revealed that survey respondents who acknowledged the pharmacist's heath care role were more likely to:

- believe that it is the pharmacist's role to give advice on how to take prescription medications and that this role is being performed by their pharmacist;

- expect the pharmacist to provide advice on the diagnosis and treatment of minor conditions and that this role is being carried out by their pharmacist and
- believe that the advice given by the pharmacist is generally helpful to their treatment (Heffernan et al. 1993).

This was supported by the study of Lam and Krass (1995) on consumer perceptions involving 25 Sydney community pharmacies which also showed that patients perceived that it is a pharmacists' role to provide counselling on over-the-counter medications and to give advice on the identification and treatment of minor illnesses.

3.7.3.4 Patients' expectation and satisfaction with pharmacy services

Outcomes studies in pharmacy have included patient satisfaction as a measure of patient outcome emanating from pharmacists' patient-oriented interventions. However, a number of studies have shown that patients equate their satisfaction with different aspects of pharmacy services. Some patients tend to be satisfied with cost of commodities and service convenience (e.g. location, waiting time) and these aspects were related to choice of pharmacy or regularity of visits (Briesacher and Corey 1997; Martin 1994; Stratton et al. 1993). Patients' satisfaction with previous counselling experiences with a pharmacist have also been identified as a motivating factor in their seeking further counselling from pharmacists (Schommer et al. 1995; Heffernan et al. 1993). Higher level of patient satisfaction with pharmacist's counselling is more likely to occur when the patient who comes for the counselling has experienced sub-optimal outcomes of drug therapy, has a lower level of self-perceived medication knowledge and those who have stronger interest in medications (Schommer et al. 1995; Cady 1988).

3.7.3.4 Question-asking and desire for information

Schommer and Wiederholt (1994) noted that patient question-asking significantly affects the content and length of pharmacists' counselling and is a motivating factor for pharmacists to increase their provision of information. They found that when patients did not ask questions,

the average counselling time was 33 seconds but when patients asked questions, the interaction lasted about 122 seconds. However, patients' question-asking behaviours is variable. Patients held different reasons for seeking and not seeking information on medications and several of these were also tied up with other patient-related aspects. Taylor (1994) found that only 4% of patients in his study actually hesitated to ask for information while the remaining 96% did not want any information. Familiarity with the use of medications and having received advice from other health professionals were two leading reasons why some patients did not want information. In another study, patients with low need for cognition did not have an intrinsic need to know more about their medications, and therefore, could be predicted to resist any counselling effort from the pharmacist (Schommer et al. 1995). In some cases, patients who hesitated to ask the pharmacist for information had perceived the pharmacist to be busy and did not take the time to bother them with their questions (Taylor 1994; Smith 1990).

3.7.3.5 Patient abilities

"Patient abilities" refers to a patient's characteristics which may affect the interpersonal communication of a patient with a pharmacist. Such is exemplified by handicaps of various forms: sensory (blindness, deafness), physical (paralysis, congenital deformity), communicative (speech impairment), mental (educationally subnormal), psychological (mental disorders) and social (introversion), among others (Schommer 1994; Morrow and Hargie 1987). Patient abilities were reported to create communication difficulties for pharmacists such as those given in Table 3.1.

3.4.7 Other factors

3.7.4.1 Attitudes of other health professionals towards pharmacist's role

The increasing responsibility of pharmacists in health care has attracted both positive and negative views from other health professionals. Most of what has been written on this aspect

is about the physician who, in community practice, is responsible for prescribing medications to patients. An earlier New South Wales survey reported the attitudes of medical practitioners towards community pharmacists' patient counselling role. A majority of these physicians perceived that pharmacists' role should include the following:

- dispensing of prescriptions and ensuring that patients understand how to use their medications;
- providing a wide range of over-the-counter drugs and counselling about their use and
- promoting healthy lifestyle and preventative health care (Ortiz and Thomas 1985).

These physicians, however, were opposed to pharmacists becoming involved in the management of major diseases and also the performance of diagnostic tests such as pregnancy testing and blood pressure monitoring. In a U.K. study involving about 300 general practitioners, the overall opinion was in favour of increasing the role of pharmacists in health care (Bond et al. 1995). The aspects of pharmacists' services more likely to be accepted by doctors were the provision of advice regarding the disposal of unwanted medicines, provision of compliance aids, and the reporting of adverse drug reactions. These physicians did not support pharmacists' role in the selection of medicine and dosage following agreed protocols and, similar to Ortiz and Thomas' findings, disliked the provision of diagnostic and screening tests in the community pharmacy. The same results were reflected in two further studies: one involving New York physicians and the other, Western Australian physicians (Jacobs et al. 1997; Bailie and Romeo 1996). All of these studies implied that while most physicians support the patient counselling activities of pharmacists, there was little support for the provision of health screening activities by pharmacists. Other studies have revealed that a number of physicians did not share the view that pharmacists are capable of giving adequate advice to patients. Perceived shortage of time with patients and insufficient theoretical and practical knowledge were some of the reasons for the negative views given (Troein et al. 1992).

There are fewer studies regarding the views of pharmacists' counselling role by health professionals other than the physician. One study, though, has described views expressed about the pharmacist's specific counselling role by a group of health professionals – dietitians, nurses and physicians – who specified the pharmacist as the best possible source of information on drug-nutrient interactions (Teresi and Morgan 1994). This common opinion was based on pharmacists' perceived education and training, their constant exposure to patients and better awareness of non-prescriptions drugs taken by patients.

3.7.4.3 Government Policies

The unabated problems in health care and their socio-economic complications prompted governments to seek quality and cost-effective measures to address health problems in populations. Health care professionals such as pharmacists were entrusted specific responsibilities in public health care. The enforcement of the OBRA '90 mandatory patient counselling and drug use review in the U.S. was a giant step in the government's involvement in regulating specific aspects of community pharmacy practice. The majority of the states had the law in place, particularly for Medicaid beneficiaries. However, research studies on outcomes of implementation found that not all potential recipients of pharmacists' patient counselling were able to benefit from such service. Although this result may be directly interpreted as unsatisfactory performance by pharmacists, the studies also confirmed the presence of equally important factors affecting pharmacists' counselling other than the law. While OBRA '90 was influential in setting new standards in professional pharmacy practice, alone it has limited effect on pharmacists' counselling performance when not supported by other facilitating factors (De Young 1996; Lyons et al. 1996; Rumore et al. 1995; National Association of Boards of Pharmacy 1994).

3.7.4.3 Professional mission

Pharmaceutical care has become the present and future mission of the pharmacy profession. The practice of pharmaceutical care by pharmacists would fulfil their social responsibility and

accountability to the society. It has inspired the development of training and educational programs with the view of enhancing pharmacists' contribution to desirable patient outcomes in drug therapy. In addition, it has invigorated research efforts towards the transformation of professional practice from a drug-oriented to a patient-oriented one in most practice settings. Through pharmaceutical care models, ways to improve patient counselling, as a major interface between community pharmacists and patients, are being explored.

3.8 Summary

As discussed in this chapter, previous research findings about pharmacists' patient counselling have added to the body of knowledge about this aspect of pharmacy practice. These findings have led to the identification of the (1) structural components of patient counselling, (2) factors affecting pharmacists' performances and (3) educational needs of pharmacists in terms of knowledge and skills. Several studies were also able to characterise and compare pharmacists' counselling performances and identify personal attributes of pharmacists affecting their counselling behaviour. With a greater demand for pharmacists' patient counselling in the light of recent developments within the profession and in the greater health care environment, a need to improve pharmacists' performance has been suggested in many studies.

A survey was conducted by the National Association of Boards of Pharmacy (NABP) to determine the extent and nature of pharmacists' counselling on prescription drugs after the implementation of OBRA '90. The survey showed that:

- four out of ten consumers were offered counselling about 70% of the time by a pharmacist
- information commonly provided tended to be those already known to the patients and
- certain aspects of information about missed dose, monitoring of drug effect, side effects and special precautions for using a medication were not emphasised in the counselling (NABP 1994).

In addition to these findings, the preceding studies reviewed in this work have clearly described that a large number of pharmacists are still reported to:

- perform few counselling episodes (fewer patients counselled) and
- provide inadequate counselling to individual patients (some important aspects of counselling were not taken up with a patient).

In order to determine why such low performance in patient counselling prevails in community pharmacy practice, previous researchers have looked at various factors which facilitate and hinder pharmacists' counselling. Table 3.2 summarises and classifies the factors reported in studies among Western countries.

Table 3.2 Summary of factors affecting pharmacists' patient counselling

Factors
Workplace-related • practice setting (chain or independent, rural or urban) • payment methods or financial remuneration • number of personnel and workload • volume of prescription • physical layout and private/semi-private consultation area • availability of resources (patient profiles, information leaflets, good support staff)
Pharmacist-related • demographic characteristics (eg. age, length of practice, job position) • clinical knowledge (therapeutics, disease states, pharmacokinetics, counselling methods, drug interactions, pharmacology) • attitude towards drug therapy outcomes, professional relationships, professional fulfilment, assumption of responsibilities and counselling role • perception of patient's need for information and their familiarity with medications, other health professionals' recognition and acceptance, counselling situation • skills (interpersonal communication, verbal and non-verbal interactions)
Patient-related • demographic characteristics (eg. age, gender, educational attainment) • knowledge and perception of pharmacist's role and training • patients' expectation and satisfaction with pharmacy services • question-asking and desire for information • patient abilities (sensory, physical, communicative, mental, psychological, social)
Other factors • attitudes of other health professionals towards pharmacist's role • government policies • professional mission

The number of factors impinging on pharmacists' counselling practices is enormous. However, not all of these factors affect community pharmacists at any one time, at any one place, with the same magnitude. The impact of these factors can not be made universal because pharmacy practice, in itself, can not be isolated from the cultural, socio-political, economic characteristics of the country and the locality of practice as well as the unique individuality of each pharmacist. Differences in effects could also be related to the differing characteristics of national health care systems and attributes of their drug distribution process. This is one limitation which should be taken into consideration in the utilisation and adoption of the information gathered and presented by various researchers. Despite this observation, certain generalisations can be made regarding community pharmacists' patient counselling, from the point of view of research and education:

- The various external and internal factors presented in the literature could be used to identify factors which directly affect pharmacists' patient counselling in a specific geographical area of practice;
- the specific factors identified could be utilised in finding practical ways to improve pharmacists' performance in patient counselling;
- new research methods should be utilised in order to understand the complex interplay of factors which pharmacists have to dealt with in their practice;
- educational interventions to address the knowledge and skills needs of pharmacists in effective patient counselling should be developed and
- the outcomes of any educational intervention should be assessed in terms of knowledge, attitudinal and skill acquisition and to ascertain how educational gains are applied in the workplace bearing in mind the individuality of each pharmacist.

De Young (1996) has clarified some important points in his review of the 25-year research on pharmacists' patient– communication views and practices in North America. First of all, it was shown in the literature that there was no dramatic improvement in the quantity and quality of pharmacist-patient communication over the last 25 years (1969-1994). Secondly, the counselling practice is influenced by a myriad of factors and researchers presented divergent views about the way some of these factors affect the provision of counselling by pharmacists. Thirdly, a number of external factors perceived to facilitate pharmacists'

counselling did not significantly improve the practice, including government mandate on patient counselling. Fourthly, various research methodologies used by researchers may have affected the characterisation of pharmacists' patient counselling. He urged researchers to "learn more about the language and meanings, rules, strategies, unconscious conflicts, values and economic constraints that practising pharmacists use and face in their daily practices". Lastly, the paradigm of science adopted by previous researchers, though of value, may not be adequate or appropriate towards a better understanding of pharmacist-patient communication. He added that new paradigms and methods of research may be necessary to identify paths which could lead to an improved understanding of pharmacist-patient communication.

While focus is on the re-orientation of practice research, of equal importance is the enhancement of knowledge and skills among pharmacists. Although there have been several means whereby pharmacists obtain further learning, the greater responsibility lies with providers of continuing education such as professional organisations and schools of pharmacy.

CHAPTER 4

Patient Counselling Research: A Review of Methodologies

4.1 The Need for Research Re-orientation

"In a professional discipline, research must eventually produce knowledge in a form that can be used to improve the practice of that profession" (Morse and Field 1996). In pharmacy, research is a means to clarify and address gaps between ideal and actual pharmacy practice and consequently, has the expectation to facilitate transition towards patient-oriented practice among pharmacy practitioners. There are three reasons, at this phase, why a research re-orientation might be instrumental in the facilitation of change within the profession.

Firstly, although the outcomes of traditional research approaches provided vital information about pharmacists' patient counselling at the general level (Chapter 3), they were not able to explain underlying reasons for the observed variability in counselling behaviours. It was surmised that the poor explanatory power of such findings could be traced to the paradigm and approaches used by researchers in this field (De Young 1996). The research orientation certainly influences the choice of methods, the kind of data desired and the manner by which the data are interpreted to represent aspects of actual practice. Hence, it is essential to review previous research orientations, approaches and methods in the light of their appropriateness to, and explanatory power over, pharmacists' patient counselling. Also, it has become important to explore alternative research orientations and methods and determine their appropriateness in providing answers to the vague practice issues at hand.

The second reason is, since a majority of the previous studies investigated pharmacists' patient counselling on the basis of pharmacists' expected competence in counselling, the nature of this phenomenon has not been fully explored along the perspectives of

communication and education, both of which are within the realm of the social sciences. These two relevant concepts have an explanatory bearing, not only on the observed process but also on the outcomes of the patient counselling process. The understanding of, and expectations of, pharmacists' behaviour could probably be enhanced by a greater understanding of the social nature of the counselling process.

A third reason why a re-orientation in research is necessary concerns the educational requirement of a patient-oriented practice. Before pharmacists can perform adequately according to a new practice concept, the acquisition of required knowledge and skills, as discussed in Chapters 2 and 3, is indispensable. One of the established sources of learning is continuing professional education (CPE) offered by several providers such as professional organisations and academic institutions. Reports of positive outcomes from CPE programs in many countries have been inconsistent and workplace evaluation has not earned a permanent place in CPE program formats. The present author, in her previous work, designed a system for CPE program development which is expected to be useful in designing appropriate and relevant programs (Robles 1995). The features of this system take into consideration:

- adherence to relevant conceptual or philosophical basis of adult learning regarding the choice of learning methods and content,
- the importance of training needs assessment and contextual analysis to guide the knowledge and skill components of the program,
- a curriculum approach that emanates from the findings regarding the training needs of the pharmacists, available resources and identified contextual factors and
- the formulation and utilisation of workplace performance evaluation.

The effectiveness of this approach, although expected, has not been investigated in actual CPE program development. It has not been tested to see whether this particular method, as an educational intervention, could be a viable and relevant means of influencing pharmacists' actual practice towards a patient-oriented one.

4.2 Philosophical Issues in Patient Counselling Research

4.2.1 The role of paradigm

"The notion that what we come to know is to a large extent selected and shaped by what we already know, has cropped up independently in the philosophy of science" (von Glasersfeld 1995). In other words, even scientific theories are shaped by the existing presuppositions concerning the nature of the world, and therefore by the way the world is viewed (Markova 1982). A universally accepted set of such presuppositions is called a *paradigm* (Kuhn 1962). The importance of paradigm in research is expressed in one recent definition – " a paradigm is a collection of logically connected concepts and propositions that provides a theoretical perspective or orientation that frequently guides research approaches towards a topic" (Morse and Field 1995).

Markova (1982) argued that different social realities provide different experiences. They lead to different ways of seeing the world and consequently, lead to different beliefs concerning the world. She added that "all our perception is theory-laden, that is, based on our previous knowledge and experience. Such knowledge and experience determine what we focus on when perceiving individual objects". Generally, people are unaware of their commitment to a paradigm supporting their perceptions and beliefs. This lack of awareness presents some disadvantages: it prevents alternative thinking and researching and it also lead to unjustified generalisations across different subjects. However, when new facts do not seem to fit into the framework of what is being believed in, or when problems arise which could not be dealt with by the present system, or when 'pieces of the puzzle do not seem to fit together', then and only then, the questioning of held presuppositions begins. "It is only when anomalies begin to accumulate that one begins to wonder what went wrong" (Markova 1982).

The process of paradigm development seems to be an evolutionary cycle, as illustrated in Figure 4.1. Kuhn (1962) described the pre-paradigm period as a time when a number of competing schools of thought co-exist and contribute to the generation of concepts, methods

and understanding of a phenomenon. Then when a single theory is accepted by the whole scientific community, an actual paradigm is established. After the paradigm has been formulated (period of normal science), science proceeds with the development of new theories, new facts within the framework of the paradigm, and of 'puzzle-solving', that is of fitting new facts into the paradigm until anomalies appear. "First attempts to solve the problems of cases that seemingly will not fit are nevertheless made within the existing paradigm. But as more cases are found that resist explanation, the paradigm collapses and a new one arises to initiate the same journey through the stage of normal science (Markova 1982).

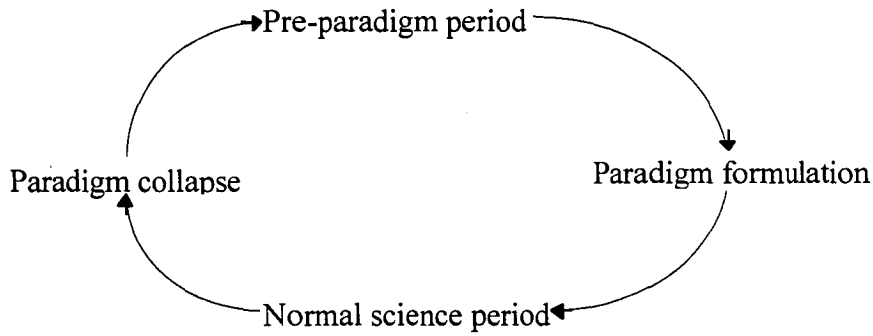


Figure 4.1 The cycle of paradigm development

4.2.2 The question of paradigm appropriateness

The paradigm that directs researchers' approaches and methods regarding pharmacists' patient counselling has never been questioned until recently, when available research findings could not fully explain certain issues in pharmacists' counselling behaviours. By its nature, patient counselling is a social process and is therefore governed by a social philosophy. However, it has been more common for previous researchers to approach the subject in a manner similar to the approach they used for the 'non-social science' aspects dominating pharmacy education and practice. This philosophical dilemma has also been observed in other disciplines. The view that a framework suitable for the physical sciences is also suited

to psychology, and consequently that the subject matters of psychologists and physicists differ 'only in the phenomena they choose to study – the behaviour of human beings rather than physical objects' is still shared by some psychologists (Markova 1982; Evans 1978). The indiscriminate use of a framework across fields could also be carried out to an extreme; in medical practice, for example, patients could be treated as 'things' or 'machines' and were, therefore, viewed as objects of action rather than subjects and perceived as insensitive objects whose feelings do not count (Howard 1975). This is one characteristic of what is known as "dehumanization of health care", a manifestation of the biomedical paradigm which had alienated the body from the sick person (Freund and McGuire 1995).

Patient counselling tended to be viewed and assessed as a component of pharmacy practice which a pharmacist either 'performs' or 'does not perform'. Adequacy of performance has often been attached to objective measures in the form of: number of counselling events, number of items taken up in a counselling event and the amount of time spent with a patient. Most of the studies which utilised these measures did not clarify the paradigm taken nor have they been questioned on the basis of the appropriateness of research approach taken. It is apparent also, that this trend in research has been maintained for quite a number of years.

4.2.2.1 Positivism

The paradigm which has an established dominant position in scientific investigations for centuries is positivism. A basic postulate is that "there is an objective reality that is absolutely true and, with the proper methods, that reality can be known" (Baker 1992). Acquisition of knowledge based on this philosophy is objective, based on the premise that the human mind is capable of passive observation through the senses. It posits that the only acceptable means in the acquisition of that knowledge is through deductive reasoning and intuition, and anything obtained other than through such process should be regarded as error and dangerous. It is only the knowledge gained out of deductive reasoning that could become external standards for gauging the mind's performance (Markova 1982). As a consequence, it

has become necessary to establish sets of rules and theories, and devise measures which will reduce or eliminate potential personal biases. It has also separated the workings of the mind from the body and excluded values and human experience from the field of scientific investigations. Together with applied Newtonian science, this philosophy has excluded subjective issues from the intellectual and mathematical components of scientific studies.

Positivism has guided the majority of previous research approaches and methods used in investigating pharmacists' patient counselling. Its characteristics are evident in many studies. Firstly, deductive reasoning is the accepted research norm in which variables, concepts, constructs and hypothesis are derived from previous research and relationships are tested during the research process (Morse and Field 1995). Secondly, objectivity has been manifested in several ways:

- the use of methods and measures which have to be rigorously followed, preferably with quantitative validity and reliability testing;
- the reduction of observed phenomena into 'variables' which are the "measurable characteristics of a concept and consist of logical representations of attributes" (Morse and Field 1995);
- the seeming assumption that variables chosen by a researcher are viewed or understood equally by subjects under study across all possible social, cultural and geographical boundaries and are, therefore, subject to generalisations;
- the reliance on a set or group data, statistical prediction and probabilistic estimates (Tesch 1990);
- the researchers are trusted to be non-intrusive, totally independent, objective observers of their fellow humans and capable of producing neutral data (Baker 1992) and ironically,
- the expression of data tends to be in the objective language, terms and meanings created by the researcher rather than that of the pharmacists under study (De Young 1996, 1996a);

Thirdly, there is a limited amount of data on highly subjective, individualised issues about pharmacists' counselling. Such manifestation, according to Baker (1992), has been taken by logical positivists as a deviation from objective law-like generalities which they are trying to

establish; and according to Heelan (1977) is an evidence of the dogmatic assumption that knowledge itself is independent of human-intentionality structures.

The positivist paradigm in patient counselling research is akin to the biomedical paradigm which has dominated the research and practice of medicine and other allied health professions for decades and for which the biopsychosocial paradigm is currently being considered as an appropriate alternative (Chapter 2). Following a similar trend, a re-examination of the paradigm governing pharmacist-patient communication research is being advocated and the search for a better alternative paradigm has been proposed (De Young 1996, 1996a).

4.2.2.2 Constructivism

Constructivism, as an alternative philosophy, sprang from the notion that human beings do not objectively discover reality but invent it. Rather than passively observing reality in the acquisition of knowledge through the senses or by way of communication, people actively construct the meanings that frame and organise perceptions and experiences (von Glaserfeld 1995; Baker 1992). As such, acquisition of knowledge cannot be absolutely objective but subjective. This stance does not support the idea that what is not objective is unacceptable, but rather acknowledges the value of individual perceptions and experiences in the acquisition of knowledge, more so in the understanding of the individual him/herself. Research built on this paradigm (1) focuses on the value of meanings and words, (2) is inductive in nature, (3) does not limit the number of variables to be collected but concentrates on all data deemed relevant to the research question, (4) recognises that research design and interpretation is usually context-dependent and (5) the criterion of knowledge is internal, rather than an external standard, such as the perceived relevance and value of the argument being presented rather than statistical significance (Daly 1993; Markova 1982).

This philosophy has manifested itself through 'qualitative' methods which are in place in the field of psychology and other social sciences and are being adopted by various health sciences, especially in the nursing profession. Studies aimed to increase understanding of

patients' perspectives on health issues such as drug compliance, health care-seeking behaviour, social network and support, life stressors and health beliefs utilise qualitative methods in which the research data are expressed in terms of the patients' language, concepts and meanings (Adams et al. 1997; Koval and Dobie 1996; Ostergren et al. 1995; Fallsberg 1994). A few studies on pharmacists' counselling views, orientations, communication problems and practice difficulties, particularly those of De Young (1996b), Schommer et al. (1995), Fallsberg (1994), Lilja and Larsson (1993), Morrow et al. (1993) and Morrow and Hargie (1992, 1987), have utilised qualitative methods of conducting research and have generated pertinent data in this area of practice.

Both of the paradigms discussed here have their own merits, as presented in Table 4.1, in consideration of their respective contributions towards the acquisition of knowledge in various research areas. Rifts between their respective proponents do exist but several authors discourage taking strong advocacy of either side for philosophical reasons as it would only underestimate the unique value of each paradigm in acquiring knowledge. Thus, researchers themselves were admonished to view a methodology guided by any paradigm as merely a 'tool' for solving research problems and, as such, must be selected to answer the research question/s (Morse and Field 1996; Kellehear 1993). It cannot be discounted, however, that a clear understanding of the philosophical and theoretical assumptions underlying the approach, design issues, data collection methods, data analysis and contexts in which the findings are generated, provides sufficient guidance to a researcher in the selection of appropriate research methods (McGee-Brown 1994).

Table 4.1 Positivist and contructivist paradigms' distinct applications in research

	Positivist	Constructivist
Objectives (in relation to theory)	• ;testing of established theories • confirmation of the validity of the theory or knowledge • to provide ground for prediction or prescription	• generation of a theory from data obtained • development of a theory • to bring knowledge into view
Approach	• deductive reasoning • hypothesis is generated from previous research findings by demonstrating relationships and testing the predictive value of specific variables	• inductive reasoning • generally descriptive, naming phenomena and positing relationships; frequently conducted in naturalistic setting and considers *context* as part of the phenomena
Methods Involved	• Quantitative methods, starting with a set of concepts or variables to be tested • setting up of experimental conditions for testing • use of statistical methods for confirmation	• Qualitative methods, starting from raw data • identification of patterns, concepts or variables during data analysis (analytic induction) • description of concepts, tentative causes and relationships

(Morse and Field 1996; Daly 1993; Harding et al. 1990)

4.2.3 A communication orientation

4.3.2.1 Present orientation

Previous studies have contributed substantially in the determination of the quantity and content of pharmacists' patient counselling and in the identification of the various external and internal factors affecting the practice. Research in this area has used various orientations to pharmacist' patient counselling and, therefore, a unifying framework which could classify studies according to a definite and consistent structure, and which could systematically group existing research findings, seems to be lacking. Many of the previous researchers have either used a rather specific concept of pharmacist-patient communication or have simply overlooked the need for a communication model on which to base their particular subject of

study. As a result, a variety of meanings and concepts of pharmacists' patient counselling exists. In addition, the past trend towards quantitative characterisation had inferred 'quality' of communication in terms of numbers – for example, questions a pharmacist asked, questions a patient asked, length of time spent counselling and patient's level of knowledge based on information received – rather than the issue of appropriateness or adequacy according to patients' needs and thus even the concept about 'quality' communication is also variable (De Young 1996). Studies which aim at enhancing the understanding of the distinctiveness of pharmacists' counselling given the complexity of community pharmacy practice may be timely and necessary. The use of a frame of reference may be helpful and appropriate in the systematic study of patient counselling as a communication process.

When studying a specific type of communication such as pharmacist-patient communication, two major problems could be encountered. One is the problem of overgeneralisation which could happen when communication in different situations is studied using idealised and abstract communication terms. This may, according to Mortensen (1972), result in overlooking of factors which are present in many communicative situations but do not function uniformly across all social situations. On the other hand, there is the possible danger of focusing only on unique communication attributes, limiting the applicability of obtained findings to other classes of interaction. In as much as either of these extremes has to be avoided in research, a compromise has to be reached whereby both unique and common characteristics of communication can be accommodated by the chosen framework.

An appropriate point of reference neither ignores the complexity nor explains away the communication process. Therefore, it should be able to fit varying perspectives and points of observation on the basis of what is fundamental to all communication behaviours and be able to acknowledge specific factors that have some influence on the process and outcomes of complex communication events. In addition, as a classification system, a framework should enable one to abstract and to categorise potentially relevant parts of the communication process, and thus clarify the structure of complex events (Miller 1981).

4.2.3.1 Contextual orientation

As a form of communication, pharmacists' patient counselling undoubtedly has the attribute of being multidimensional and complex. The framework "systems of human communication" developed by Mortensen (1972) seems to be promising in providing order and coherence to the characteristics and factors already described in Chapter 3. His approach is free from the arbitrary distinctions resulting from the oversimplification of communication behaviour that may limit the scope and view of pharmacist-patient communication as a whole. The human communication framework also eliminates the difficulty of grouping all the complexities of communicative behaviour into a single, holistic criterion which has the tendency to ignore both the differences in the constituent processes and the interactions among factors affecting the observed or overt pharmacist-patient communication events. While the "use of a flexible, noninvariant structure that cuts through the insights of a multiplicity of approaches...may lack the order of a more monastic view, it is far more consistent and in keeping with the state of knowledge in a field composed mainly of concepts, assumptions and loosely knit research findings" (Mortensen 1972). Mortensen's approach seemed appropriate to adopt since the multiple factors affecting pharmacists' patient counselling could all be accommodated into one communication framework; it does not emphasise just one aspect but the totality of the whole communication process. However, some terminological modification have to be made. In lieu of the word 'systems' used by Mortensen (1972), the word 'contexts' used by Civikly (1981) will be adopted since a 'system' connotes a sense of connectednesss, usually in an orderly manner, among its various components, a characteristic which may not be true for the components of a context of communication. The 'context' (eg. intrapersonal) is more of an abstract grouping of components (eg. attitude, role orientation, self-perception) which may be categorically related but not connected. The modified framework is illustrated in Figure 4.2.

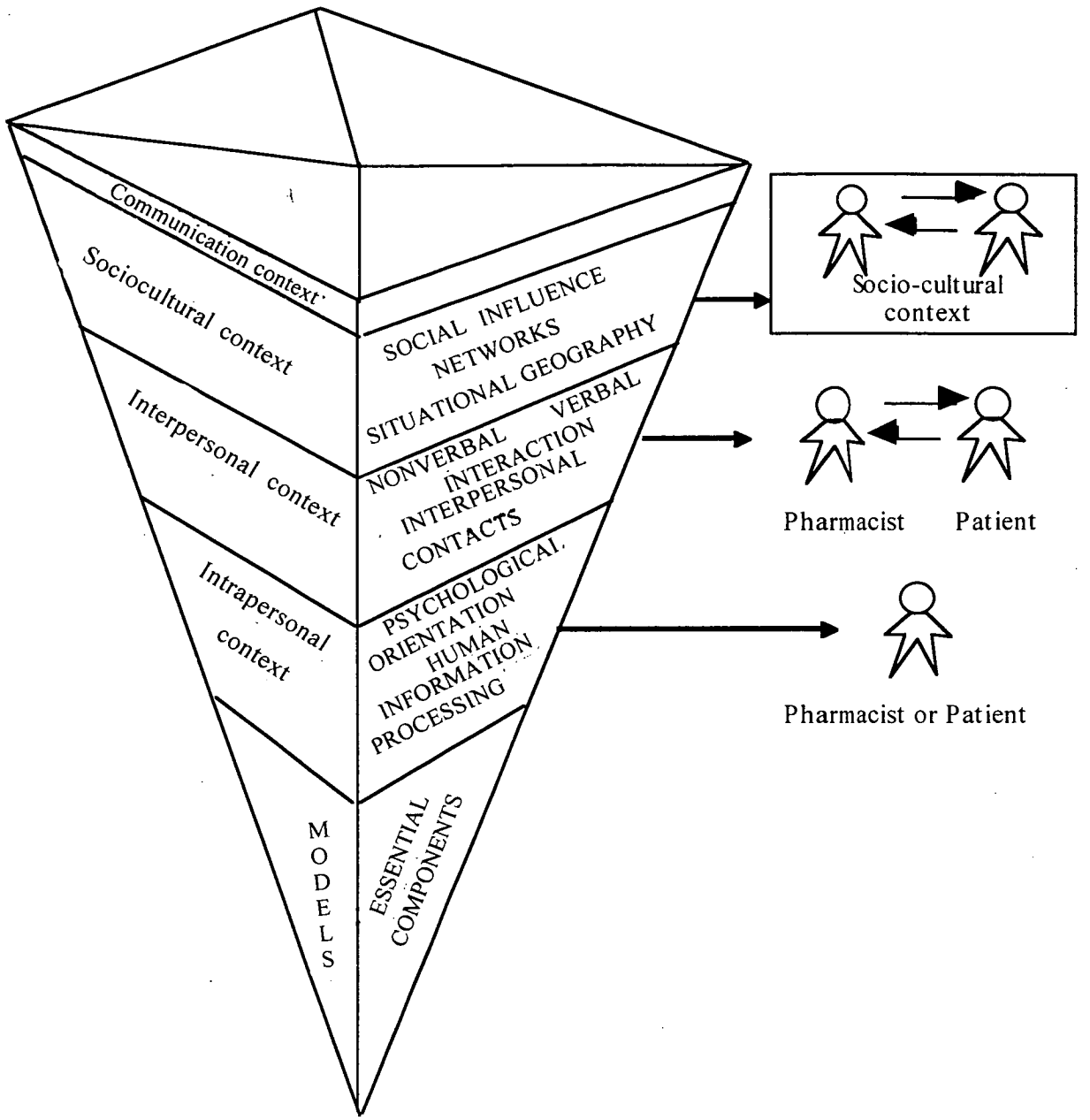


Figure 4.2. The "Contexts of Pharmacist-Patient Communication" (Adapted from Mortensen, CD. 1972. Communication: The Study of Human Interaction. New York: McGraw-Hill Book Company).

Figure 4.2 illustrates a multidimensional framework composed of several contexts and their respective levels of analysis. The complexity of the level of analysis decreases from top to bottom. The components of the contexts may superimpose on each other in varying degrees and, therefore, their separation is categorical rather than relational.

Models

At the lowest level is *models*. A *model* represents the relevant variables which are isolated from the total process. It serves as a classificatory system that enables one to abstract and to categorise potentially important parts of the process. The development or choice of a model depends on the purpose and interests of the developer or the person adopting it. Models vary in physical structure and their interpretative nature. As they are arbitrary constructs, they can not be taken as an identical replica of the process itself (Miller 1981). Models only facilitate the understanding of the communication event which is described as dynamic, irreversible, proactive, interactive and contextual and, therefore, when studied 'as is' have the tendency to confound because of their numerous attributes. Models, mostly of interpersonal communication, have been used as tools in the teaching of communication skills in pharmacy (Gilbert and Quintrell 1996; Hargie et al. 1994, 1993; Quintrell 1994; Tindall et al. 1989).

Intrapersonal context

The *intrapersonal context* focuses on the dynamics of the communication experience for either party. It is composed of (1) psychological orientation and (2) human information processing. Psychological orientation refers to one's frame of reference during a social interaction and covers the "attitudes towards communication, the readiness or predisposition to respond to message cues in characteristic ways" (Mortensen 1972). Other psychological aspects which impact on the communication process include self-concept, personality, affect, perception, motives, feelings of self-efficacy, expectations, beliefs and values (Hargie et al. 1994; Tindall et al. 1989; Rosenberg 1981; Schneider et al. 1981).

Human information processing involves a set of complex and interrelated physical and psychological functions such as decoding (activities required to transfer raw sensory data into what is experienced as meaningful information) and encoding (activities transforming information into some behavioural response); two functions which are interdependent rather than separate processes in the human nervous system (Mortensen 1972). This covers the person's acquisition of knowledge, memory and recall of facts and details taken up in a communication event.

Interpersonal context

The *interpersonal context* considers the personal contacts, verbal and nonverbal interaction between two parties. The simplest model of interpersonal communication has the following important elements: sender, message, receiver, feedback and barriers (Tindall et al. 1989). Hargie et al. (1994) use the terms: communicators, message, medium, channel, noise, feedback and context to describe the basic components of interpersonal communication. Each of these components possesses characteristics which do or do not contribute to effective communication. In verbal interaction, effective communicators make use of social skills – questioning and reflecting, giving information and explaining, listening, self-disclosing, influencing and asserting. The number and type of skills applied in an interaction vary according to the context of communication (Hargie et al. 1994).

A. Verbal interaction

Pharmacists, as communicators in patient counselling, share advanced communication skill requirements with professional counsellors, nurses, physicians, social workers and other health professions whose one role is to be a 'helper' to a patient or client in a therapeutic relationship. Rather than merely using the technical skills of verbal communication, the effectiveness as a communicator in this context, is enriched by affective skills such as active listening, empathic responding, reflection of feeling, interviewing and influencing skills (Tindall et al. 1989; Brammer 1988; Nelson-Jones 1983; Casara 1981). These skills have

great applicability in health settings, particularly in health provider-patient interaction. The possession of these skills makes a difference in an interaction because it enables a patient to view the pharmacist as a 'caring' health professional adding to his/her personal satisfaction as a recipient of care. On the other hand, a pharmacist's awareness and use of such skills could help build rapport and establish a better pharmacist-patient relationship (Hargie et al. 1993).

B. Non-verbal interaction

The nonverbal components of an interpersonal communication equally contribute to the attribution of meanings to the verbal messages. These components are: body movement, gestures, proxemics (distance between two interacting persons), facial expression, eye contact, posture, vocal quality and intonation (Mortensen 1972). They give the listener an idea about the affective state of the speaker and convey emotions such as anger, sadness, fear, frustration or affection (Hargie et al. 1994). Perceived incongruence between verbal and nonverbal messages such as lack of eye contact, facial expression and body posture denoting lack of interest and the use of a commanding or threatening vocal tone could distract the transmission of the intended message to a receiver (Tindall et al. 1989).

C. Interpersonal Contacts

The interpersonal contacts take into consideration 'who' and 'how many' people are present in the interaction and how a person regulates his communication behaviour depending on these considerations. The 'who' aspect has something to do with the perceived credibility of the source of the message. Attributes such as competence, trustworthiness, good will, idealism, similarity, power and dynamism are some of the independent gauges used by people to judge the credibility of the speaker (Hart et al. 1981). Interpersonal contacts also include those factors such as need for privacy as a requirement for self-disclosure. Generally, the fewer persons present, the more each person can influence the balance of forces and reduce situational barriers to facilitated communication (Mortensen 1972).

Sociocultural context

A. Concepts of space, time and setting

In the *sociocultural context,* the communication experience is viewed as being influenced by situational, social, institutional and culturally defined patterns of behaviour. "There is no way to divorce the particular meaning of verbal and nonverbal cues from the significance of the larger social context in which they occur" (Mortensen 1972). Situational elements or contextual factors, according to this author, define matters both of mood or atmosphere, of content and relationship and even physical distance. The attitudes people have for each other relate to their physical and psychological concepts of space, time and setting. Concept of space includes physical distance, boundaries, territory or personal space and physical orientation (eg. side-by-side, opposite each other, sitting, standing). The power of setting or physical arrangement where the interaction occurs can act as a constraint or a facilitator of interpersonal contact. Time orientation, bound by culture and class, has a direct bearing on sequential aspects of communication, pattern and rhythm of interaction, length, rate and frequency of speaking (Mortensen 1972).

B. Cultural influence

Culture, an abstract concept which refers to overt, patterned ways of behaving, feeling and reacting, is one important factor in the transmission and interpretation of messages. It may refer not only to racial groupings but also to organisations and groups having the same belief and value systems. What makes sense to a person is affected by his/her cultural exposure. The implicit rule of culture restricts the timing, protocol, style and content of information exchanged by various groups and classes of people (Mortensen 1972). Cultural values and beliefs shape individuals' expectations and responses in communication. Actions expressing assertiveness such as asking favours, help-seeking, expression of positive and negative feelings, refusal of requests, initiation, continuation and termination of general conversations are found to be influenced by the culture factor (Lee 1996; Hargie et al. 1994). Matters

pertaining to gesture, eye contact, voice and posture, frankness, courtesy bear the influence of culture (Tindall et al. 1989; Mortensen 1972). Knowledge and understanding of the patient's culture is a vital characteristic of a 'helper' which could facilitate communication (Brammer 1988).

C. Demographic characteristics

The influence of demographic characteristics such as age and gender on communication has been explored in different ways. The kind of interaction, verbal and nonverbal, is sometimes influenced by the perceived appropriateness to age or gender of the receiver by the sender of the message. Children and young adolescents pay more attention to the visual component of communication than older adolescents and adults. Older health professionals are often viewed as more experienced and competent than their younger colleagues. However, this is also dependent upon the professional context and the age of the patient (Hargie et al. 1989). There are also distinctions in the way males and females participate and are perceived in communication. Behaviour, responses, expectations, listening ability and disclosure are some aspects where reported differences between the genders were observed (Dindia and Allen 1992). Role identity, role attitudes and cultural norms within a particular gender group were some of the provided explanation for such differences (Hill and Stull 1987).

D. Social networks

Communication network covers the different types of feedback within and among social situations, group networks (linkages between social groups with face-to-face relationships), interposed networks (mass media) and culturally-defined networks (Mortensen 1972). A type of communication which seems to describe the informal linkages between patients and different health professionals, family members and friends is the wheel network. In this network, the patient is the 'hub' which tends to connect various other sources of health information. The patient consults these sources separately at different times and settings where similar or related messages flow from one setting to the other. The role of the patient

as a receiver and sender of health and personal information in this centralised network is crucial. The overall flow of messages in this network has been described by Mortensen (1972) as being the most restricted among other types. Flow of communication in this network depends on the relative ability of the 'hub' to use and transmit information, and the quality of the information itself.

Research application of a communication orientation

When applied to pharmacists' patient counselling, this framework can be used to classify research in this field according to the various contexts of communication and their components. A possible research application of this frame of reference is illustrated in Figure 4.3.

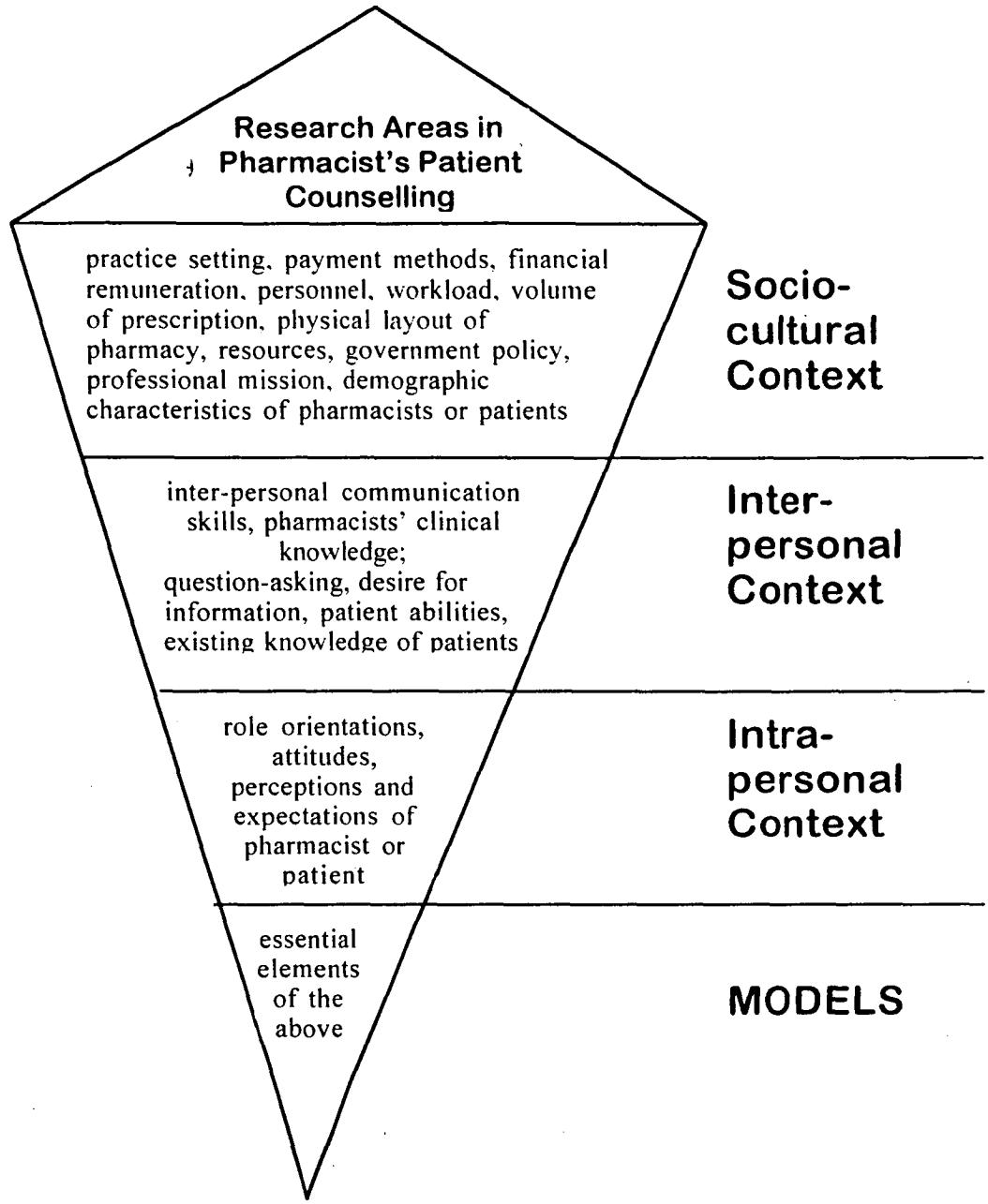


Figure 4.3 Application of contexts to pharmacists' patient counselling research

In the above illustration, the various aspects of pharmacists' patient counselling together with the factors affecting their counselling performance are accommodated in a single research framework. This framework may be useful in research concerning this area of pharmacy practice. It could be valuable in:

- identifying and classifying the particular grouping and context of a particular research;
- opening up other research aspects about, and ascertaining aspects of, patient counselling which require further investigation in conjunction with a review of existing literature;
- recognising that patient counselling as a form of communication is a multidimensional and complex process which extends beyond the setting of interaction and the persons involved in the process and
- appreciating the contextual nature of the patient counselling process itself.

4.3 Methodological Issues

4.3.1 Quantitative methods

Quantitative research seeks causes and effects from the 'etic' or world view perspective. It relies on the researcher's interpretation of the observed phenomena rather than on the subject's understanding of events (Morse and Field 1996). Quantitative methods have their value in socially-oriented research in that they generate precise measurements of social action which can be explained by the accumulation of statistical data. Primarily, they (1) explain social behaviour in terms of a cause and effect relationship with the social action as the effect and an underlying principle as the cause and (2) measure social behaviour in terms of objective criteria not defined by the participants (Harding et al. 1990). Characteristics of these methods are:

- use of a limited set of variables;
- availability of validated research instruments and procedures;
- techniques for research design and analysis are prescribed *a priori* in the research proposal;
- data represent objective or numerical measures ('hard data');
- data are collected from a larger number of units (participants) to reduce bias;
- random selection of sample is ideal;
- internal validity resides with the rigour of the statistical analysis and
- external validity depends on the representativeness of the population from the sample (Morse and Field 1996; Daly 1993).

There are quite a number of quantitative methods, being the mainstream methods in scientific studies, which are used for socially-oriented research. The field of psychology alone is dominated by experimental methods which are useful in the testing of existing hypotheses and concepts about the human psyche and behaviour (Bellack and Hersen 1984). Research designs include the use of control groups, repeated measures, matched subjects and independent groups, the validity and reliability of which are measured statistically. Data are represented by numbers in different forms – nominal, ordinal, interval and ratio – under specific variables. The analysis of data, using descriptive statistics, is presented in graphs and tables containing frequency distributions, central tendencies and variability. Inferential statistical methods, depending on the nature of the variables, are utilised to estimate the significance of the findings (Tilley 1994).

Although the above methodology represents the general trend in psychology, the fields of clinical and applied psychology also place some importance on case study methods and single-case research methods. Kratochwill et al. (1984) recognise that these designs provide an important knowledge base that is unobtainable through the traditional large population-between group design in clinical research. Preference for these methods is made when there is a limited number of subjects and when development of an alternative measurement technology that can be used repeatedly over the therapeutic process is desired. Tesch (1990) argued that on a technical basis, case studies and participant observation are themselves qualitative methods.

4.3.2 Qualitative methods

Qualitative methods describe a phenomenon from the native's point of view or 'emic' perspective (Vidich and Lyman 1994). They are used to study 'real life' situations which are not possible to study quantitatively and cannot be fully understood by statistical explanation. The research aims for a detailed description and understanding of what and how

people think, where they derive their ideas and how likely they are to act in particular circumstances (Harding 1990). Some characteristics of qualitative methods are:

- usually conducted in a naturalistic setting and is context-dependent;
- experimental control of 'extraneous' variables is not made by the researcher;
- selection of participants (convenience sampling), usually few in number, is not random but according to perceived appropriateness and adequacy;
- data precedes theory development;
- data are mostly textual such as transcriptions of interviews, observations of the setting and of the actors and cannot be readily transformed to numerical codes ('soft data');
- data analysis consists of structuring and condensing the full range of data obtained;
- the outcomes of the research are presented in a more descriptive or interpretative form and, therefore, are not generalizable;
- validity depends on the strength of the argument, its capacity to account for the full variety of data, whether findings elaborate existing knowledge and render themselves comparable to findings in other contexts (Morse and Field 1996; Daly 1993; Harding et al. 1990; Tesch 1990; Lincoln and Guba 1985).

Qualitative research as a form of naturalistic inquiry is practically more diverse in the number and kind of methods of data gathering. The methods are grouped according to their philosophical roots and are also distinguished from each other by the kind of research question each purports to answer. Although they share common characteristics, each presents reality in different perspectives and therefore, knowledge of their applicability and limitations is important. The more common methods used in health research are phenomenology, ethnography, grounded theory, ethnoscience and qualitative ethology. These methods make use of audiotaped conversations, written anecdotes, interviews, participant observation, field notes, video-recording, observation and use of various written materials such as photographs, maps, genealogies as materials for obtaining data about the topic of study (Morse and Field 1996; Tesch 1990).

Textual data emanating from the use of qualitative methods are richly descriptive and extensive. Initial steps prior to their analysis, whether manual or computer-aided, usually consist of transcription, checking, coding, sorting and storing in a form that can be easily retrieved and analysed. There are four cognitive processes which Morse and Field (1996) suggest as integral to the analysis of all qualitative methods: comprehending (making sense of the data), synthesising (decontextualising, recognition of norms and factors), theorising (systematic selection and 'fitting' of alternative models to the data) and recontextualising (development of the emerging theory to render it applicable to other settings and to other populations). In recontextualising, established theory provides a context in which to link the new findings to existing literature.

4.3.3 Triangulation method

Triangulation is the process whereby a combination of methodologies is used in the study of the same phenomena (McGee-Brown 1994). This combination could be within-methods (eg. qualitative and qualitative) and across methods (eg. qualitative and quantitative). There are also four types of triangulation based on the specific research components being combined: (1) investigator (multiple investigator investigating the same phenomenon), (2) data source (use of as many data sources as possible to understand the events being studied, (3) data collection methods (within-method and across-method) and (4) theoretical (approaching data with multiple theoretical perspectives and hypotheses) (Denzin 1970).

Morse and Field (1996) categorised triangulation on the basis of timing, either as (1) sequential, where qualitative methods are used initially until the hypothesis emerge and then tested using appropriate quantitative methods and (2) simultaneous, in which both methods are used at the same time to address the same problem. An example of the latter is when the qualitative methods are used to describe the affective aspects while quantitative methods are used to measure other variables.

Certain advantages are expected to be achieved with triangulation. Of the qualitative-quantitative combination, Ford-Gilboe et al. (1995) assert that combining these strategies across paradigms may enhance the scientific value of a study and may result in new methodologies to address health needs. The use of multiple methods of data collection reduces threats to validity in that the weaknesses in one method are offset by the strengths of the other (Denzin 1970). It could also result in corroborative data across sources, methods or sites and could be used as a strategy to enhance validity of research findings (McGee-Brown 1994). In nursing research, triangulation was reported to produce rich and productive data which is expected to provide an understanding of human beings and their health needs (Cowman 1993). In a similar vein, the use of two qualitative methods could also enhance the researcher's understanding of the phenomenon and could illuminate realities which elude alternative approaches (Wilson and Hutchinson 1991). However, in this case, the results are combined and not the data.

It is important to understand that combining methods cannot be done arbitrarily and without careful consideration of the nature of the research problem being studied. Temple (1997) airing her concern on the increasing application of qualitative methods in social pharmacy research, had cautioned that the extent of any combination of qualitative-quantitative approaches, methods and data may involve different processes reflecting the researcher's views of social research. She urges not to use triangulation when the purpose is cross-validation of results, assuming that their outcomes will address exactly the same point, in exactly the same way. Instead, triangulation should be viewed as a 'diagnostic process' whereby frameworks of interpretations are combined. In this arrangement, each method is seen as a different basis of 'proof' or 'evidence' and therefore, contradictions as well as similarities between outcomes could be accommodated.

A summary of the practical features of the quantitative and qualitative methods which could be useful in deciding the appropriateness of methods to the nature of research is presented in the following table, Table 4. 2

Table 4.2 Features of qualitative and quantitative methods

Characteristics	Qualitative	Quantitative
Philosophical assumption	• reality is socially constructed • variables are complex and interwoven, difficult to measure • events viewed from an informant's perspective • dynamic quality to life	• facts and data have an objective reality • variables can be measured and identified • events viewed from an outsider's perspective • static reality to life
Purpose	• interpretation • contextualisation • understanding the perspectives of others	• prediction • generalisation • causal explanation
Method	• data collection using participant observation, unstructured interviews • concludes with hypothesis and grounded theory • emergence and portrayal • inductive and naturalistic • data analysis by themes from informants' descriptions • data reported in the language of the informant • descriptive write-up	• testing and measuring • commences with hypothesis and theory • manipulation and control • deductive and experimental • statistical analysis • statistical reporting • abstract, impersonal write-up
Role of the researcher	• researcher as instrument • personal involvement • empathic understanding	• researcher applies formal instruments • detachment • objective

(Adapted from Burns 1994)

4.3.4 Criteria for the choice of approach and methods

Several authors have emphasised that the choice of approach and methods has to be also guided by important research considerations other than philosophical concerns (Morse and Field 1996; McGee-Brown 1994; Daly 1993; Kellehear 1993; Markova 1982). Morse and Field (1996) emphasised that it should depend on: (1) the nature of the phenomenon to be described, (2) the maturity of the concept, (3) constraints/confines from the participants or setting and (4) the researcher's characteristics.

4.3.4.1 Nature of the phenomenon

The nature of the phenomenon indicates the types of variable or the nature of the research area. If the purpose is to test a theoretical assumption, a quantitative approach would be a good choice. If the goal is to learn more about the nature of the phenomenon, then a qualitative approach would be a better alternative. Questions such as 'why', 'how' and 'what the experience is like' could be indicators for the use of a qualitative method in as much as these types of query cannot be answered by quantitative means. Harding et al. (1990) has suggested that if trends in pharmacist's communication are desired, then a quantitative survey might be carried out. If the form of communication and interaction between pharmacists and others are of interest, then direct observation and in-depth, less structured interviews will be more appropriate.

4.3.4.2 Maturity of the concept

The maturity of the concept refers to the availability of materials about the topic, and is usually indicative of how much is known about it. If there is less available information, then it could be that the topic has not been developed enough and that an exploratory, descriptive study under qualitative methods would be suitable. On the other hand, if there is sufficient information obtained about the topic, then theoretical assumptions could be made and tested using quantitative methods. In some cases, the qualitative method could also be chosen despite copious information available on a topic if a content analysis of literature has been based on unverified or biased assumptions. If several variables about a topic are already presented in the literature and determination of relationships is possible, then a quantitative approach could be chosen (Morse and Field 1996; Daly 1993).

4.3.4.3 Limitations of participants or setting

Constraints/confines from the participants or setting take into consideration the suitability of the method to be selected according to the social features or needs of the research participants. Age, health condition, literacy, culture, mental and physical characteristics and availability of time should be a concern in the choice of methods (Kellehear 1993). Questionnaires and other written methods presume that the participants are literate. Mentally handicapped, infants and the visually impaired could be studied by observation, and therefore by qualitative means (Morse and Field 1996). Practical aspects such as time and resources are likewise important since they could limit the extent of research in terms of the duration of data collection and the amount of data to be gathered (Kellehear 1993).

4.3.4.4 Attributes of the researcher

The ability, knowledge and experience of the researcher to conduct research may influence or limit the choice of method. The researcher's ability sets the initial direction for data collection and therefore, he/she should be acquainted with the philosophical assumptions underlying different research methods. In qualitative research, though, researchers have to draw techniques from various social science fields in order to be acquainted with appropriate research techniques (Daly 1993). A qualitative researcher usually approaches and explores a topic or a setting as a learner, holding assumptions and knowledge 'in abeyance' until it is confirmed; confirmation comes at the later stage of the analysis when findings are being 'compared to fit' with existing related works (Morse and Field 1996). In contrast, researchers who are involved in quantitative social research follow the 'scientific method' of inquiry and begin with the development of theoretical models about the way individuals act under certain circumstances and then carry out controlled experiments to test predictions. Conclusions are then drawn out on the basis of statistical analysis. The latter will require the application of statistical methods appropriate to the hypothesis or characteristics of the variables being tested (Harding et al. 1990). With the increasing use of triangulation, a

researcher's skill is necessary in integrating the two paradigmatic assumptions inherent to quantitative and qualitative data. Thus, a researcher must be acquainted with the strengths and limitations of each approach.

CHAPTER 5

A Research Framework

5.1 Bridging the Theory-Practice Gap

One of the important functions of pharmacy practice research is to bridge theory and practice concerns. In the area of patient counselling, this means finding ways to enable the effective transition of the new philosophy and mission, patient-oriented care, into the daily practice of pharmacists, particularly community pharmacists. A key to this endeavour is to address the factors which are known to negatively affect the performance of pharmacists in patient counselling. The dilemma is that a myriad of factors were identified through research in various Western countries (Chapter 3). The generalisation of findings from these works presents the danger of stripping the contextual influences of political, economic, socio-cultural, health care infrastructure and other local issues surrounding community pharmacy practice which were discussed earlier as exerting considerable effect on pharmacists' counselling performance. Secondly, by adopting the stance that pharmacist-patient communication operates within several contexts, then it would be appropriate to acknowledge and determine those elements within these contexts that either have a positive or negative bearing on pharmacists' counselling.

To be able to understand factors within the context of community pharmacy practice in Tasmania, there is a need to utilise local information against the backdrop of international pharmacy practice research. There are existing works which deal with certain aspects of community pharmacy practice in Tasmania, such as those of Heffernan et al. (1993) and Polack (1990), but previous work which specifically focused on the factors affecting pharmacists' patient counselling, either on a holistic or individualised basis, appears to be lacking. Since the present research will be about this area, then baseline information on factors affecting Tasmanian pharmacists' patient counselling has to be gathered prior to any

intervention. The identification of local factors will not only be helpful in defining the contextual nature of, but also in focusing any intervention aimed at enhancing, the local community pharmacists' counselling practices.

Research efforts in countries such as the United States and Canada are ahead in devising means to translate pharmaceutical care into the community practice setting. Wilson and Whelan (1995), in their work with Canadian pharmacists, realised that the first objective of interventions along the line of patient-oriented care should be the preparation of pharmacists for their new tasks. A similar view was echoed by Campagna and Newlin (1997) who advocated that research "should examine the most appropriate way to change motivation and expertise" among pharmacists if their level of drug therapy decision-making was to improve. Schommer and Cable (1996) also added the need for pharmacists and students to be trained to socialise professionally to encourage them to assume a more active type of practice in comprehensive pharmaceutical care. After determining community pharmacists' needs in drug utilisation review and patient counselling in five states in the USA, Richards and Blank (1997) recommended that "providers of continuing education should identify those disease states pharmacists encounter most often and provide the opportunity to acquire the knowledge and skills necessary to manage patient care".

5.1.1 Role of knowledge and skills

Knowledge and skills stand as basic elements in the preparation of pharmacists towards the provision of a patient-oriented care (Tables 2.4 and 3.2). For practising community pharmacists in Tasmania, acquisition of these attributes is through the continuing professional education (CPE) provided by the Pharmaceutical Society of Australia (PSA), Australian College of Pharmacy Practice (ACPP), Australian Institute of Pharmacy Management (AIPM), Pharmacy Board of Tasmania, drug companies and professional journals (Robles 1995). Polack (1990) reported that for the period 1988-1989, only 25% of local pharmacists participated in CPE programs at a recommended level or better. In

addition, there has been no known assessment of whether these learning opportunities were able to influence local practice or were able to provide knowledge and skills adequate for pharmacists to practise according to a new practice model. Therefore, this educational concern presents a research opportunity.

There are several disease states which are commonly recommended as topics for CPE programs such as cardiovascular diseases, asthma and diabetes (Wilson and Whelan 1995). For practical reasons, it will be more relevant if the selection is based on several criteria. A useful set of criteria consists of: (1) identified training needs of pharmacists, (2) national health priorities, (3) complexity of drug treatment, (4) treatment cost, (5) the relative importance of patient education as a treatment component, (6) means of prevention and (7) availability of research time and resources (Commonwealth of Australia 1996; Commonwealth Department of Human Services and Health 1994). Aided by these criteria, non-insulin dependent diabetes mellitus (NIDDM) has been chosen among other priority disease states as the topic for a CPE program. The following review of literature highlights the concern for patient counselling intervention in this area.

5.2 Non-Insulin Dependent Diabetes Mellitus Patient Counselling

5.2.1 Goals of therapy

Diabetes is the fourth leading cause of death in most developed countries, mainly because of its serious health complications. It costs the Australian economy around A$1 billion annually in terms of in-patient costs, nursing home costs, physician visits, drug therapy and production loss due to early mortality (International Diabetes Institute 1996). About 85% of 350,000 known diabetics in Australia in 1995 are NIDDM cases. One of the main goals of the National Action Plan for Diabetes for the Year 2000 is to reduce the prevalence and incidence of complications of NIDDM (Australian Diabetes Society 1993).

The main therapeutic goals for NIDDM patients are the maintenance of the quality of life and the prevention of long-term complications such as neuropathy, retinopathy and nephropathy and lately, the increased risk for cardiovascular disorders (Nathan 1996; Stern 1996; Cooppan 1994). Prevention of these complications is associated with good control of blood sugar level (Nathan 1996; Gatling and Hill 1988). Good glycemic control has been frequently documented as being achievable by patients' adherence to drug regimen and lifestyle changes such as diet control and maintenance of adequate physical activity with regular self-blood glucose monitoring (Berger et al. 1996; Turner et al. 1996; U.K. Prospective Diabetes Study Group 1995). However, Harris (1996) in a study of 2405 diabetics in the U.S.A. argued that many patients still have low level of self-care which may not be optimal for the prevention of complications. He further recommended that the long lead time between the metabolic effects and the manifestation of clinically recognisable complications will require a long-range, secondary prevention program.

The American Diabetes Control and Complications Trial (DCCT) revealed that despite its therapeutic benefits, good metabolic control of diabetes increases the risk of severe hypoglycemia in patients three-fold and, therefore, may require close monitoring and consistent support from a health care team (Short 1994). Short (1994) translated the need for a team approach to NIDDM management in Australia into the "Shared Care" principle in which the burden of management falls into the hands of the general practitioner as the main health care coordinator with other skilled health professionals - dietitians, podiatrists, diabetes educators, psychologists - providing support in terms of patient management, routine assessment, changing insulin dose and simple screening procedures. However, he believed that good, cost-effective management is best achieved by teaching individual patients to take control of their own targets and therapy rather than having these imposed on them. To empower patients, the lack of knowledge and skills mainly responsible for poor self-care behaviour has to be overcome (Dunn 1988). Diabetes education, though challenged for lack of direct health outcomes, has been proven to increase knowledge, compliance, psychological

adjustment and acquisition of self-help skills of ambulatory diabetic patients (Berger et al. 1996; Basa and McLeod 1995; Van Veldhuizen-Scott et al. 1995; Dunn 1988). Several studies also found that if diabetes education can help patients improve self-care behaviour, glycemic control is enhanced (Peyrot and Rubin 1994; Redhead et al. 1994).

5.2.2 Existing support and services in Tasmania

Comprehensive diabetes education and support services are ideally provided in a co-ordinated, multidisciplinary, ambulatory care setting such as a diabetes centre. However, there are very few such centres in Australia's states and territories. In Tasmania, the only centre in operation is the Northern Region Diabetes Centre in the city of Launceston. NIDDM patients in other parts of Tasmania have no access to unified, comprehensive diabetes care. Instead, health services and relevant education have to be separately obtained from different sources such as general practitioners, diabetes educators from both the hospitals and Diabetes Australia, dietitians, podiatrists, and medical specialists in the city and its suburbs, some services of which patients are not aware.

In general, pharmacists are expected to provide adequate and appropriate information to optimise outcomes of drug therapy. There are existing studies, both national and overseas, which documented the effectiveness of a pharmacist as a drug counsellor, a health educator and an important point in the health care referral system in both hospital and community settings in the 1990s (Basa and McLeod 1995; Coper 1993; Ford 1993; Society of Hospital Pharmacists in Australia 1993; Gowan 1992; Harding et al. 1990). Lately, the merit of their involvement in the education of NIDDM patients in coordination with other diabetes caregivers in an ambulatory setting has been studied (Basa and McLeod 1995; Van Veldhuizen-Scott et al. 1995) but has not been explored in Australia.

The existing needs in the provision of healthcare to NIDDM patients in Tasmania provide a great opportunity for community pharmacists to optimise their contribution to the healthcare system and to the diabetic community at large. The Pharmaceutical Benefits Scheme allows

the general practitioner (GP) to prescribe six months' supply of hypoglycaemic drugs at a time through an original supply and five repeats. This means that many, if not most patients, would only be reviewed by the main care provider (GP) twice a year. On the other hand, the patient will normally visit a pharmacy every month to obtain a new supply of their medication. The pharmacist is the health professional with the most frequent regular contact with the patient and this places the pharmacist in an ideal position to provide ongoing support to the patient.

5.2.3 Potential role of community pharmacists

With 397 registered pharmacists in Tasmania in 1995, 80% of whom are in community practice, the position of pharmacist in both rural and urban areas in the State is strategic (Pharmacy Board of Tasmania 1995). Pharmacists have the potential to be health educators for NIDDM patients and could also become an effective link in the healthcare referral system, first by making information available to patients regarding existing health and support services and second, by providing informational support to their care coordinators about problems concerning patients' medications, compliance and conditions, which are considered important in a comprehensive approach to diabetes management. It was recommended in several studies, however, that effective performance of these extended roles by pharmacy practitioners will depend on the possession of adequate and appropriate knowledge, attitude and skills (Fisher 1994; Koda-Kimble and Batz 1994).

5.3 Training Needs Assessment and Contextual Analysis

5.3.1 Training needs assessment

It was asserted by the present author in a previous work that for a program to be relevant, training needs assessment and contextual analysis should be conducted prior to the formulation of objectives and design of learning (Robles 1995). Prior knowledge and experience, as well as the level of professional skills of the learners are useful in setting the

objectives of the learning activity (Krajnc 1989). Houle (1984) proposed that to determine those aspects, the following procedure could be utilised: (1) the development of criteria required for the performance of roles, (2) data-gathering regarding the current performance of the learners based on the criteria developed, (3) comparison of the current performance with both minimum and ideal standards of practice and (4) identification of deficits of performance. This procedure will help focus the objectives of the CPE program to the identified deficits in NIDDM patient counselling of community pharmacists in Tasmania for which no existing account is apparent.

5.3.2 Contextual analysis

After identifying deficits of performance of local community pharmacists, other environmental factors surrounding this specific counselling have to be studied. The design of a CPE program does not only relate to the competency of a practitioner; it should consider the workplace environment and the immediate social context (Anderson et al. 1993). Since NIDDM treatment and management is multi-disciplinary, key health professionals as well as patients themselves are directly involved. Knowledge and understanding of NIDDM counselling services offered by general practitioners, diabetes educators, podiatrists, dietitians and other health professionals in the State is helpful in focusing community pharmacists' counselling. Health- or patient-related issues which are found by other practitioners to be lacking or requiring emphasis could be reinforced by pharmacists and would be valuable in enriching their counselling. In addition, pharmacists will also get acquainted with the counselling practices of the other members of the health team which would be useful in deciding future patient referrals.

As was mentioned before, a great deal of the treatment and management responsibility of NIDDM lies with the patients themselves. Symptoms of the disease, precautions to take, appropriate intake of their medications, proper diet and exercise, proper footcare, among others, are all components of the self-management of NIDDM. Without attention to self-

management, immediate negative metabolic effects are more likely, and long-term complications may ensue (Price 1993). However, the assumption of responsibility and adjustment to their condition by patients are affected by several psychological, social, physiological and stress-related factors (Blank 1991). One of those which seems to positively influence self-management of NIDDM patients is patient education.

In a study of community diabetes care in the US during a 10-year period, Hiss et al. (1994) reported that there was a modest but not impressive improvement in the diabetes care at the community level. A similar study by Anderson et al. (1994) found that fewer patients are receiving education from community physicians and the situation has deteriorated through the years. A large proportion of diabetic patients, particularly non-insulin dependent, those with lower socio-economic status and those living outside urban areas were found not to have received any diabetes education (Coonrod et al. 1994; Park 1993). Whether the same situation is occurring in the Tasmanian context is not known, therefore, information pertaining to this aspect has to be gathered. The level of diabetes knowledge as well as patients' utilisation of available sources of diabetes information is of utmost concern. Overall, the training needs and contextual analysis will have to balance between pharmacists' knowledge and skills needs in NIDDM counselling with that of community health needs, particularly those of NIDDM patients as perceived by key health professionals and patients themselves.

5.4 CPE Program Development

The formulation of an appropriate CPE program for community pharmacists about NIDDM patient counselling will follow the system developed by the present author in a previous work. Figure 5.1 illustrates the system showing the four elements that will have to be utilised in the planning, implementation and evaluation of the educational intervention.

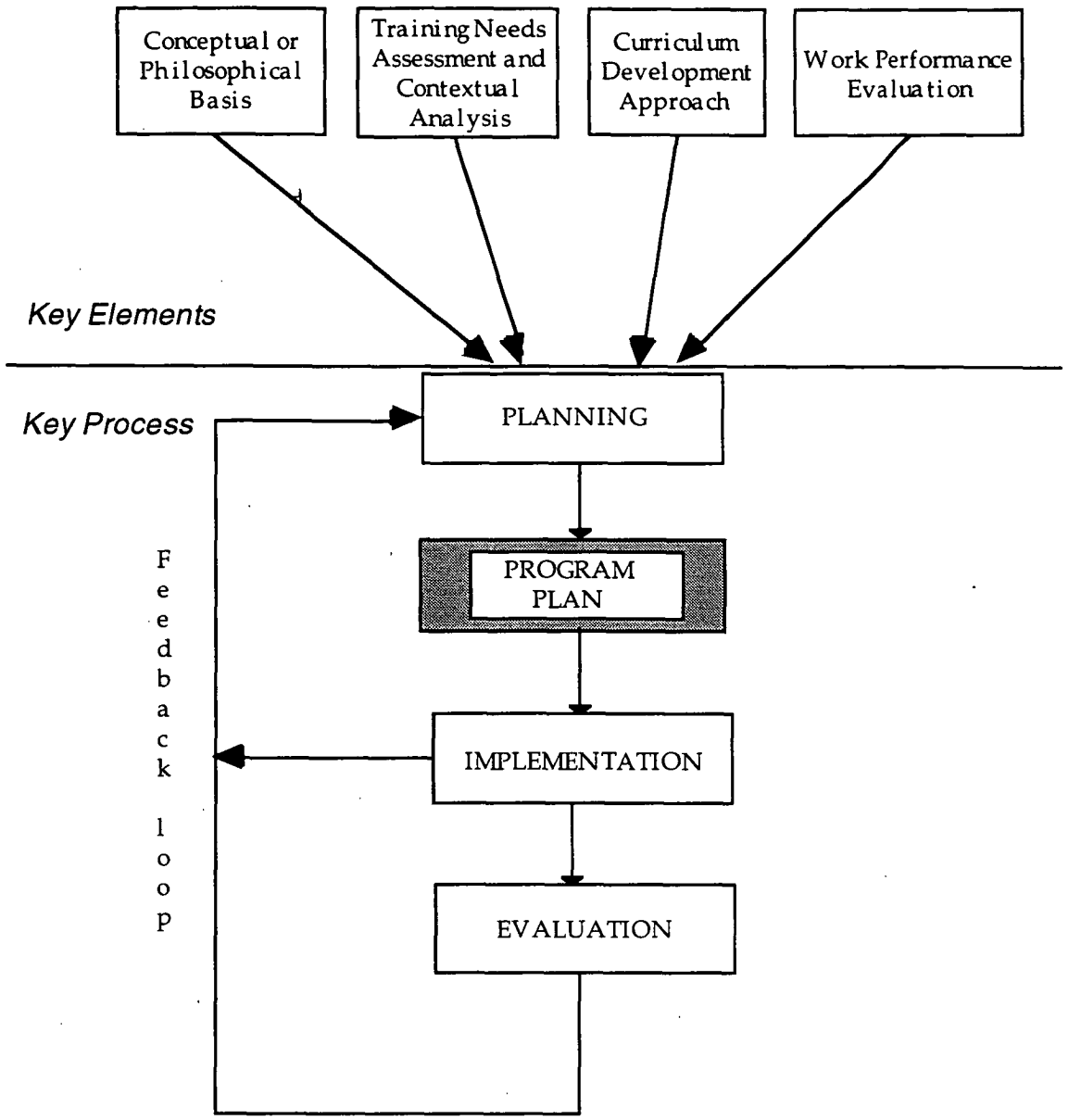


Figure 5.1 A CPE development system (Robles 1995)

Table 5.1 outlines the uses of the four key elements in the CPE program planning. It should be noted that a high degree of importance is being placed on the contextual nature of the educational intervention which is compatible with the nature of pharmacist-patient communication itself.

Table 5.1 The relevance of the key elements to NIDDM patient counselling planning

Key Element	Planning Implications
Conceptual or Philosophical Basis	• consideration of community pharmacists' preferences • variety of content, modes, settings and evaluation of learning • integration of knowledge, skills and attitudes based on the needs of the pharmacists and problems in patient counselling • recognition of the need to identify barriers and motivators to learning
Training Needs and Contextual Analysis	• determination of deficits of performance • formulation of appropriate learning objectives • determination of the nature and depth of content and methods of delivery • creation of a program which is feasible given the resources available to providers and learners • inclusion of external limitations as factors affecting learning outcomes
Curriculum Development Approach	• specifications of objectives and performance criteria based on training needs assessment and contextual analysis • formulation of learning sequences and selection of appropriate learning materials • strong emphasis on outcomes and process evaluation
Workplace Performance Evaluation	• selection or development of evaluation methods and materials applicable to the workplace • identification of other areas where future CPE intervention would be appropriate • identification of the factors relating to the failure in learning outcomes aside from the process of learning • provision of data for future training needs assessment

(Adapted from Robles 1995)

Based on the preceding table, the NIDDM patient counselling training program had the following main features:

- integration of knowledge, skills and attitudinal components based on the needs of the pharmacists and other contextual factors affecting NIDDM patient counselling;
- objectives of learning and performance criteria were based on the findings from the training needs assessment and contextual analysis;
- utilisation of a multi-disciplinary approach and comprehensive in content;
- a variety of modes and settings as well as methods of evaluation;
- the design and methods of learning were within the limits of resources available to providers and learners;
- strong emphasis on outcomes and process evaluation;
- selection and development of appropriate evaluation and materials applicable to workplace evaluation and
- overall feedback in the form of recommendations emanating from the implementation and evaluation of the program.

The format of the program contained the title of the program, its objectives, the learning design (sequence of activities, methods and materials), outcomes and process evaluation, personnel designation and functions, the budget and the timetable of activities. However, this program was designed after the training needs assessment and contextual analysis data were generated and analysed. It will be taken up in Chapter 11.

5.5 Process and Outcomes Evaluation

5.5.1 Process or program evaluation

Program evaluation refers to the examination of "experiences and activities involved in the learning situation" and includes learners' participation and satisfaction with the program (Cervero 1988; Print 1988). Participants' reactions to the methodology, materials, instructors, facilities, content and other aspects of the program are critical factors in the continuance of a program (Phillips 1983). This type of evaluation has several purposes: (1) improvement of the program during the development phase, (2) facilitation of rational

comparison between comparative programs and (3) contribution to the general body of knowledge about effective program design (Payne 1994). Evaluation data may be useful during the developmental stage of the program (formative evaluation) or at the end of the program (summative evaluation) such as an end-of-course assessment. The results, however, do not measure the amount of learning that took place.

5.5.2 Outcomes or product evaluation

Product evaluation of CPE programs is not only concerned with the determination of whether the learning objectives were achieved in terms of change in knowledge, attitudes and skills but also with the application and impact of learning to professional practice (Robles 1995; Brady 1990; Cervero 1988). Changes in knowledge, attitude and skills will be grouped under educational outcomes and those aspects which relates to workplace application of learning will be under workplace outcomes.

5.5.2.1 Educational outcomes

This level of evaluation is about the measurement of learned principles, facts, techniques and skills presented in a program which are usually presented as changes in cognitive, affective and skill attributes. The measures used should be objective and quantifiable indicators of how the participants understood and absorbed the content of learning. They are not necessarily measures of work performance (Phillips 1983). The educational outcomes will depend greatly on the objectives set for the educational program and will also determine the choice of evaluation measure (Mehrens and Lehmann 1991). Some methods for measuring educational outcomes are paper and pencil test, learning curves, skill practices and job simulations.

5.5.2.2 Workplace outcomes

This refers to improvement or positive changes made within the workplace as a result or as an influence of the learning process. When applied to pharmacists' patient counselling, this includes improvement in their provision of counselling, enhancement of their relationship

with patients and other related changes which are relevant in strengthening the patient orientation of care. It would be ideal if changes could be measured at the patient level where relationship of pharmacist's counselling intervention will be manifested in positive health decision-making but this will be subject to the availability of time and resources. The workplace outcomes will not trace up to patient compliance with their medications as this issue tends to be more complicated than expected. Methods for evaluating workplace performance are: before and after comparison, statistical comparisons, long-range follow-ups and interpretive inquiry such as ethnography, case study and ethnology (McGee-Brown 1994; Phillips 1983).

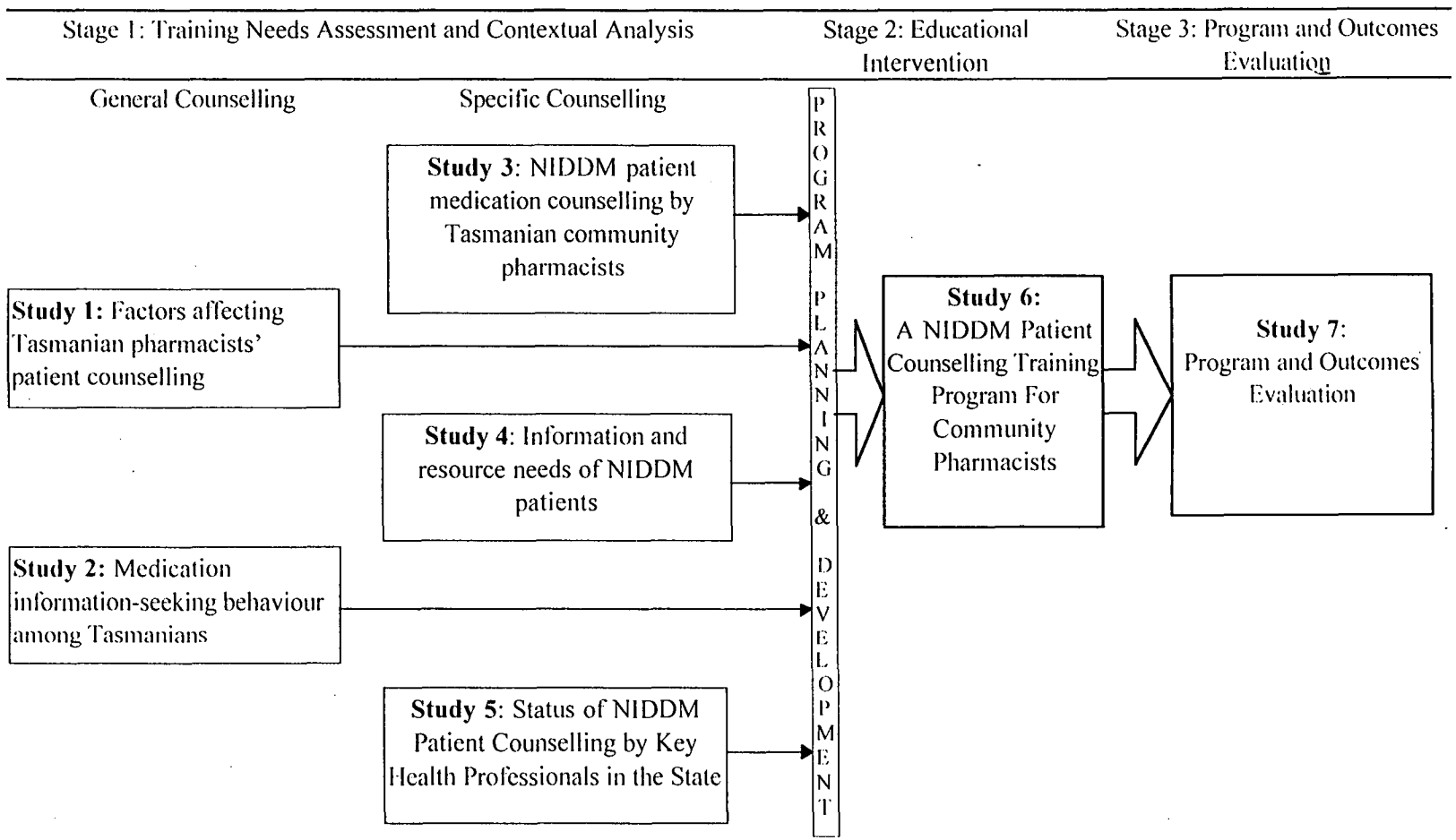
5.6 Proposed Research Framework

The research framework which accommodates all the above concerns into a single, unified work is illustrated in Figure 5.2. This framework has three stages: Stage 1 (Training Needs Assessment and Contextual Analysis), Stage 2 (Educational Intervention) and Stage 3 (Program and Outcomes Evaluation).

The first stage of the work is divided into (1) *general studies* on factors affecting Tasmanian pharmacists' counselling and patients' medication-information seeking behaviour, both of which will serve as essential input for the next stages and (2) *specific studies* on community pharmacists' training needs in NIDDM patient counselling, counselling practices of key health professionals involved in NIDDM treatment and management and information needs and resources of NIDDM patients in the State.

Stage 2 consists of the planning and implementation of the training program. The program entitled, "A Training Program in NIDDM Patient Counselling by Community Pharmacists" has both diabetes knowledge and communication skills components. Findings emanating from Stage 1 are utilised in the development of the curriculum of the training program and the formulation of its evaluation component.

Figure 5.2 RESEARCH FRAMEWORK



Stage 3 comprises process and outcomes evaluation. The evaluation process will start with the implementation of the educational intervention and end up at the respective workplaces of the trained participants several months after the program.

5.7 Research Methodology

The philosophical assumption guiding the approaches and methods in this framework may be considered constructivist on the basis of the nature of the phenomenon and the purpose of research. The ultimate goal of this work is to understand pharmacists' patient counselling in its contextual nature, specifically in the Tasmanian community pharmacy practice, NIDDM patient counselling, workplace and personal contexts. However, the choice of methods for the individual studies follows a set of criteria and is not limited to either qualitative or quantitative methods. The main considerations in deciding the appropriateness are (1) nature of phenomenon of interest, (2) maturity of the concept, (3) constraints/confines from the participants or setting and (4) researcher's capability (Morse and Field 1996). It is expected that the chosen methods on the basis of these concerns do not deter from the goal of understanding pharmacists' patient counselling and the factors which are viewed and experienced by pharmacists as influencing their effort towards a patient-oriented practice. The research methodology is presented in Figure 5.3.

The *general studies* in Stage 1 were both amenable to quantitative methods since:

- there were several identified factors (variables) affecting pharmacists' patient counselling already provided in the literature;
- only the general trend about how Tasmanians seek medication information from various sources was desired and
- larger sample sizes were required to enable generalisation of the findings on a statewide scale.

Figure 5.3 RESEARCH METHODOLOGY

Aspects of Study	Stage 1: Training Needs Assessment and Situational Analysis		Stage 2: Continuing Education Intervention	Stage 3: Program and Outcomes Evaluation
	General Counselling	Specific Counselling		**Study 7**
Pharmacist-related Aspects • role orientation • determinants of the amount of counselling • barriers and facilitators of counselling • views on NIDDM patient counselling • knowledge of diabetes management • counselling skills • personality	**Study 1** Self-administered questionnaire (Q_1)	**Study 3** Self-administered questionnaire (Q_3) using various Counselling Scenarios	**Study 6** *A NIDDM Patient Counselling Training Program for Community Pharmacists* • Planning and development based on a CPE development system • Various learning methods: lecture, demonstration, audio-visual aids, discussion, exercises, written handouts, micro-counselling technique	Overall Program Evaluation Educational Outcomes • Diabetes knowledge test (DKT 1 and 2) • Patient communication test (ECS 1 and 2) • Communication Knowledge Test (CKT 1 and 2) Workplace Outcomes • Pharmacist's Counselling Kit and Tally Card • Pharmacists' Case studies, semi-structured interviews (Q_6)
Patient-related Aspects • info-seeking behaviour • knowledge of diabetes • willingness to learn • opinions on health • satisfaction with counselling	**Study 2** Telephone survey (Q_2)	**Study 4** Semi-structured Interview survey (Q_4)		
Other health professionals-related aspects • counselling activities • counselling outcomes and feedbacks • counselling problems • perception of pharmacist's role in counselling		**Study 5** • Semi-structured interview survey (Q_5) • observation • collection of written information		

(Q_1 to Q_6 = Questionnaire Number 1 to 6)

DKT = Diabetes Knowledge Test; ECS = Effective Communication Skills; CKT = Communication Knowledge Test

Regarding the *specific studies* on NIDDM patient counselling in Stage 1, qualitative and quantitative methods were used separately for different reasons. Firstly, the assessment of pharmacists' training needs in NIDDM patient counselling was conducted on a statewide basis to obtain a good, even representation of the needs of community pharmacists from the three regions of the State. On the other hand, qualitative methods were applicable for the other two studies involving health professionals and patients. There were several reasons for this decision:

- the number of other health professionals involved in NIDDM counselling was not known nor was the exact number of NIDDM patients in the State which made generalisation impossible;
- the intention of these studies was to probe deeper into the 'experiences' and details about NIDDM counselling and information-seeking of both the health professionals and the patients, respectively and
- for the data to be relevant, the health professionals included in this work were those who were actually involved in the care of NIDDM patients.

The findings from Stage 1 were utilised in the development of the curriculum and design of the training program, following the CPE development system (Robles 1995). The major parts of the program plan were: learning, financial, distribution, organisational and personnel strategies. The *learning strategy* concentrated on the process of learning and specifies the training objectives, content of learning, sequence of learning activities, materials, methods and evaluation methods. The *financial strategy* described the management and allocation of budget. The *distribution strategy* was the means by which the learning strategies can be brought to the attention of the target population, in this case, Tasmanian community pharmacists. The *organisational strategy* referred to the management flow in the organisation. It could also be the designation of specific responsibilities related to the CPE process to particular groups. The *personnel strategy* concerned the selection of members of the pool of experts, facilitators, coordinators and staff. These may include the training, compensation, performance appraisal and reward system (Robles 1995).

Stage 3 mainly concentrated on the evaluation of the process and the outcomes of the training program. The process evaluation employed quantitative, objective methods to gather participants' views about the main aspects of the program and their satisfaction with the learning process. Regarding educational outcomes, quantitative, objective measures were used to determine any change in knowledge, in as much as there were existing materials about diabetes knowledge. However, modification of these measures is required to suit the content of the training program. Planning how the communication skills will be evaluated had been based on the choice of the learning method. As there was no baseline information regarding the previous skills of the participants and because of the difficulty and cost associated with trying to ascertain this aspect on a statewide scale, existing materials on counselling education were explored.

The choice of *micro-counselling training* method as the main method of learning counselling skills enabled the determination of skills at various stages during the training program with the aid of videotapes. Since some facilitating skills such as empathic responding and active listening were amenable to objective measurement, then quantitative method were employed and used as adjunct to the videotape method.

The workplace evaluation was conducted at individual pharmacists' workplace through the use of qualitative methods. A counselling protocol, expected to help pharmacists incorporate their learning, was developed based on the research findings in Stages 1 and 2 and on existing literature on patient-oriented counselling. Qualitative methods were used to gather pharmacists' views and opinions about their NIDDM counselling to identify specific problems and concerns in counselling and the research protocol. These methods were used on separate occasions during a six-month period.

5.7 Research Flow

The research work was divided into seven studies which were discussed and presented in the proposed framework in Chapter 4. These studies are as follows:

Stage 1: Training Needs Assessment and Contextual Analysis

- Study 1: Factors affecting Pharmacists' Patient Counselling in Tasmania
- Study 2: Medication information-seeking Behaviour among Tasmanians
- Study 3: NIDDM Patient Counselling by Tasmanian Community Pharmacists
- Study 4: Information and Resource Needs of NIDDM Patients
- Study 5: Status of NIDDM Patient Counselling by Key Health Professionals

Stage 2: Educational Intervention

- Study 6: A NIDDM Patient Counselling Training Program for Community Pharmacists

Stage 3: Program and Outcomes Evaluation

- Study 7: Program and Outcomes Evaluation of the NIDDM Patient Counselling Training Program for Community Pharmacists

CHAPTER 6

Study 1

Factors affecting Pharmacists' Patient Counselling in Tasmania

6.1 Objectives

- to determine attitudes of pharmacists in Tasmania about patient counselling;
- to identify the factors affecting the amount of their counselling and
- to determine workplace barriers and facilitators of pharmacists' patient counselling.

6.2 Methods

6.2.1 Selection of subjects

The Tasmanian Pharmacy Board was chosen as the source of pharmacists' names for the survey since their list is representative of the pharmacists' population across all practice settings. In November 1995, a copy of Board current listing of all registered pharmacists in Tasmania was obtained by permission. A total of 440 pharmacists were in the list. Forty six pharmacists had overseas addresses and, therefore, were automatically excluded from the list. The remaining 394 pharmacists, who are actually working in the State, became the basis for computing the number of pharmacists included in the pilot group. It was proposed, on the basis of small sample size, that only twenty (5%) of the 394 pharmacists be included in the pilot group. Seven names were further excluded from the general survey due to full-time involvement in non-pharmacy practice leaving a total number of 367 names.

6.2.2 Survey questionnaire design

A literature review of current research in patient medication counselling by pharmacists, Chapter 3, was made the basis for the content of the questionnaire. Three areas were

given focus – (1) pharmacists' attitudes towards patient counselling and related aspects, (2) determinants of the amount of counselling and (3) barriers and facilitators of counselling. These areas were used in the design of a questionnaire, composed of 77 statements in a 5-point Likert scale format. Demographic items such as practice setting, job position, geographic location, gender, years in practice, average working hours and membership in professional organisations were likewise included.

With the approval of the project by the University of Tasmania Ethics Committee, the first draft of the questionnaire was subjected to an objective evaluation by selected pharmacy academics and a sociology lecturer in order to check the face validity of the statements. Their suggestions were used to modify some statements in the questionnaire. Copies of the modified questionnaire were sent and pre-tested with the pilot study group to determine clarity and comprehensibility of the statements. In addition, a comment sheet was included to gather opinions on the format and content of the questionnaire.

6.2.3 Pilot study

Twenty numbers corresponding to individual names were randomly generated from Statview 4.0 random number generator. Each of the twenty pharmacists was sent a questionnaire, a comment sheet and a reply paid envelope in November, 1995. The group was given a one-month response time.

After a month, eleven returned questionnaires were received, corresponding to a 55% response rate. The ratings showed that the questionnaire had acceptable format and content. However, the completion time and statement wordings needed to be improved. In addition, the statements were re-grouped to make distinctions between statements on general attitudes to patient counselling and those statements describing the counselling practice. Based on the objective comments and scores on the rating scale, the questionnaire was further modified, refining the overall layout of the statements and their order in the questionnaire. The number of items in the questionnaire was also reduced to 65 items. The month of January 1996 was devoted to the analysis of pilot study data, reproduction of the revised questionnaires and the preparation of envelopes for posting.

6.2.4 General survey

A copy of the final format of the questionnaire (Q_1) is provided in Appendix 1.1. The questionnaire has three parts, in addition to demographic items. Parts A and C could be considered as 'scales' in as much as they are comprised of groups of items, each describing an attribute. In contrast, Part B is composed of independent items which are classified as factors which either increase or decrease the amount of counselling. The three parts of the questionnaire are:

- **Part A**: Pharmacists' views about patient counselling and related aspects (30 items)
- **Part B**: Determinants of the amount of counselling (18 items)
- **Part C**: Workplace-related barriers and facilitators of counselling (17 items)

The items in Part A are further divided into 4 sub-scales, pertaining to attitudinal issues about pharmacists' patient counselling. The items in Part B are divided into two groups. One was those factors or situations which tend to encourage a pharmacist to provide more counselling and the other, those situations or factors which may deter them from providing more counselling. Part C has 5 sub-scales, referring to commonly reported workplace factors which could affect the provision of counselling. The item groupings and their corresponding item numbers are provided in Table 6.1.

Table 6.1 Conceptual organisation and structure of the survey questionnaire (Q_1)

Item Groupings	Item Numbers*
PART A	
1. Patient counselling is subjective and patient-oriented	2.1, 2.9, 2.17, 2.25, 2.28
2. Patient counselling has many benefits	
• Patient counselling is beneficial to patients/clients	2.2, 2.10, 2.18, 2.26
• Patients derive satisfaction from patient counselling	2.3, 2.11, 2.19, 2.27
• Pharmacists have personal/ professional gains from patient counselling	2.4, 2.12, 2.20, 2.29
• Patient counselling enhances pharmacists' relationship with others	2.5, 2.13, 2.21, 2.30
3. Patient counselling is a pharmacist's accountability	
• Patient counselling is a pharmacist's responsibility	2.6, 2.14, 2.22
• A pharmacist is capable of providing patient counselling	2.7, 2.15, 2.23
4. Provision of verbal and written information is patient counselling	2.8, 2.16, 2.24
PART B	
1. Situations or factors which encourage pharmacists to provide more counselling	
• Perception of patient's information need	3.1
• New prescription	3.4
• Potential drug risk	3.5
• Drug category	3.6, 3.13
• Patient-asking	3.10, 3.3
• Presence of patient	3.14
• Therapeutic classification of drugs	3.17
2. Situations or factors which deter pharmacists from providing more information	
• Mental handicap and illiteracy	3.2
• Absence of patient	3.7
• Patient's inability to ask for information	3.8
• Highly knowledgeable patient	3.9
• Repeat prescription	3.11, 3.18
• Drug classification	3.12
• Physical and medical handicap	3.15
• Chronic medical condition	3.16
PART C	
Workplace-related factors affecting counselling	
• Time	3.19, 3.23, 3.31, 3.34, 3.27
• Remuneration	3.20, 3.24, 3.28
• Privacy	3.21, 3.25, 3.29, 3.32
• Workload	3.35, 3.22
• Resources	3.26, 3.30, 3.33

* Refer to Appendix 1, Questionnaire 1 (Q_2)

During the first week of February 1996, the revised questionnaire, together with a cover letter and a reply paid envelope, were sent to the 367 registered pharmacists in Tasmania. One month was allotted for the response period. It was indicated in the cover letter that the survey would be conducted on an anonymous basis.

6.2.5 Statistical analysis

Data from the returned responses was stored in Statview 4.0 and analysed in both Statview and SPSS 6.1. Descriptive statistics, such as frequency distributions and central tendencies were used to describe respondents' demographic characteristics. Non-parametric statistics, particularly Kruskall-Wallis (KW), Mann-Whitney U (MW) and contingency analysis, were used to determine whether there are existing relationship between pharmacists' responses and various demographic characteristics. A relationship is considered significant at $p \leq 0.05$. For Parts A and C which are used as scales, item-total correlation and reliability coefficients (Cronbach's coefficient alpha) were determined. Items with poor item-total correlations were deleted in order to increase the reliability coefficient, and therefore, the homogeneity of the scale.

6.3 Results

6.3.1 Characteristics of respondents

A total of 210 usable questionnaires, equivalent to a 57% response rate, were returned by the 6th of March. Respondents' characteristics are summarised in Table 6.2.

Table 6.2 Demographic characteristics of respondents

Category	Elements	Count (%)	
			n=210
Practice Setting	Community	168 (80.0)	
	Institutional	32 (15.2)	
	Community/Institutional	2 (0.9)	
	Other (eg academic, government regulatory)	8 (3.8)	
			n=202
Position	Community		
	Owner/manager	95 (47.0)	
	Pharmacist-in-charge	26 (12.9)	
	Pharmacist	15 (7.4)	
	Locum	36 (17.8)	
	Institutional		
	Chief Pharmacist	3 (1.5)	
	Deputy Chief	3 (1.5)	
	Staff Pharmacist	24 (11.9)	
			n=207
Workplace Location	Major City	144 (69.6)	
	Rural Major	25 (12.1)	
	Rural Other	34 (16.4)	
	Remote	4 (1.9)	
			n=186
Gender	Male	94 (50.5)	
	Female	92 (49.5)	
			n=205
Area	Southern Tasmania (002)	117 (57.1)	
	Northwest Tasmania (004)	54 (26.3)	
	Northeast Tasmania (003)	34 (16.6)	
			n=207
Years in Practice	≤ 10 years	51 (24.6)	
	11-20	62 (30.0)	
	21-30	47 (22.7)	
	31-40	35 (16.9)	
	41-50	9 (4.4)	
	>50	3 (1.4)	
			n=196
Average Work Hours per Week	≤10 hours	14 (7.1)	
	11-20	15 (7.7)	
	21-30	18 (9.2)	
	31-40	47 (24.0)	
	41-50	58 (29.6)	
	>50	44 (22.4)	
			n=158
Membership in Professional Organisations	1	84 (53.2)	
	2	50 (31.6)	
	3	17 (10.8)	
	4 or more	7 (4.4)	

At the time of the survey, the majority of the respondents were working as community pharmacists (80%) and a few as hospital pharmacists (15%). Among those in community practice, half were owners/managers and the others either working as pharmacist-in-charge (13%), assisting pharmacist (7%) and locums (18%). The majority of the pharmacists were working in the major cities (70%) and the rest in rural areas. There was a 1:1 ratio between male and female respondents. Slightly more than 50% of the respondents were working in Southern Tasmania while 26% were from the Northwest and 17% were from the Northeast parts of the State. Figure 6.1 shows a fairly young population of pharmacists in Tasmania, with almost half of the respondents practising for less than or equal to 20 years.

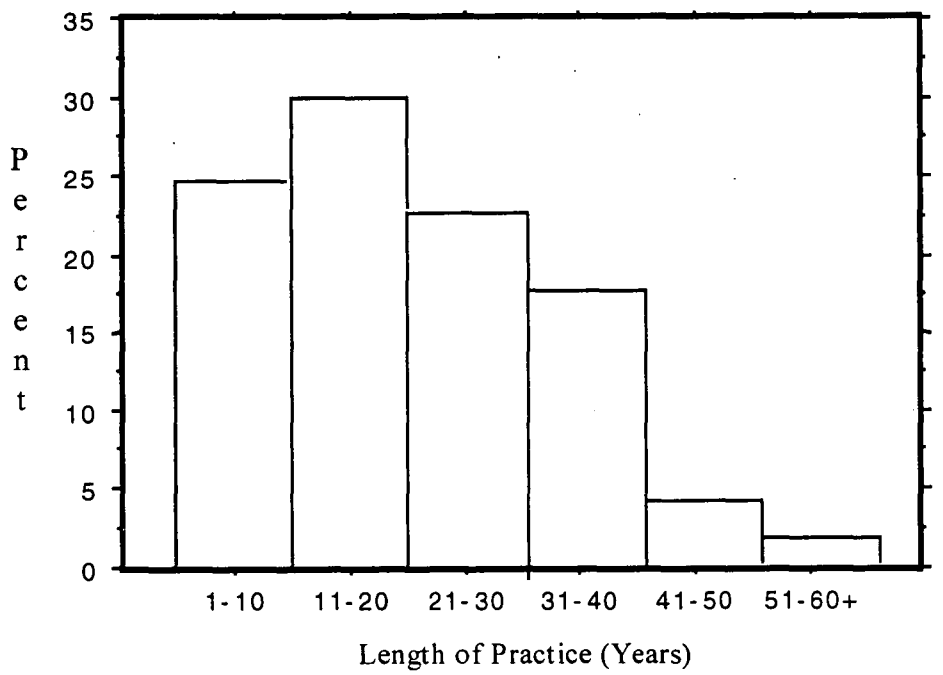


Figure 6.1 Distribution of respondents by length of practice

More than 75% of respondents were working within the range of 31 to more than 50 hours per week, which indicates that many were in full-time practice. This is shown more clearly in Figure 6.2:

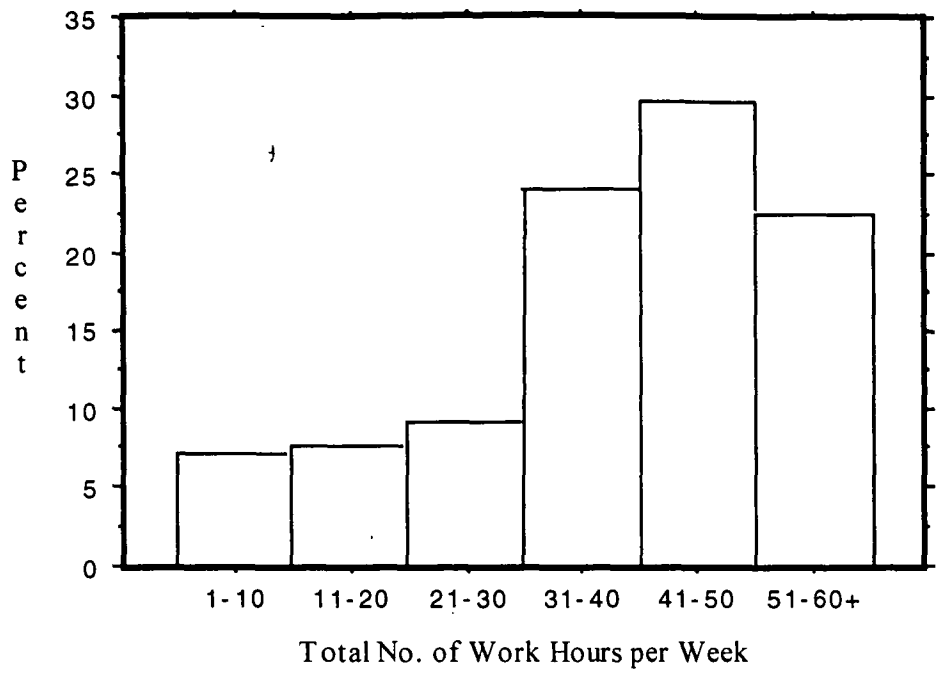


Figure 6.2 Distribution of respondents by total hours worked per week

Regarding membership in organisations, around 85% of pharmacists who responded were members of one or two professional organisations. A smaller number, 15%, belonged to more than 3 organisations.

6.3.2 Reliability of Parts A and C

The internal consistency (reliability) of the scales used for Parts A and C was determined by item-total correlation and Cronbach's alpha coefficient in SPSS 6.1. The summary of the results is provided in Appendix 2 (Tables 2.1a and 2.1b). In Part A, items under 'benefits of patient counselling' and those under 'pharmacist's accountability' tend to have a moderately high correlation and their alpha coefficients are 0.791 and 0.694, respectively. Furthermore, items having a very low item-total correlation were deleted (e.g. item 2.10). The final alpha coefficient for 'benefits of patient counselling' was enhanced, 0.794. The coefficients pertaining to the 'subjective nature' and the 'verbal and written forms of counselling' have very low values (alpha <2.0). The items in the latter groupings, are not acceptable in the form of a scale but each could be used separately in the descriptive analysis of data.

In Part C, except for items under 'resources', all the item groupings have alpha coefficients greater than 5.0 which is indicative of the moderate correlation among the grouped items. Time, remuneration, privacy and workload were used as variables in analysing statistical relationships.

6.3.3 Views and attitudes about counselling and related aspects

Table 6.3 is a summary of the mean and median values of pharmacists' responses in Part A. Overall, a majority of the respondents indicated agreement with statements that counselling is subjective and patient-oriented. The highest mean value for this item grouping is with item 2.6 which stated that 'some patients require more counselling than the others' (mean=4.45, s.d. ± 0.60, median=5.0). Respondents were also positive about the benefits of patient counselling (mean=3.92, s.d. ± 0.70). Among the possible benefits of counselling, improvement of the pharmacist-patient relationship had the highest mean value (mean=4.51, s.d. ± 0.53, median=5.0). However, there was a variable response with regards to the availability of public feedback on counselling (mean=2.69, s.d. ± 0.96, median=3.0). As for accountability, pharmacists' responses indicated acknowledgement of accountability over counselling (mean=4.15, s.d. ± 0.72). Agreement about the provision of written and verbal information seemed to vary among the respondents and was indicated by lower mean values ranging from 2.90 to 3.87.

The responses obtained in Part A were tested for possible relationships with demographic variables such as practice setting, job position, workplace location, gender, geographical area, years in practice, hours worked per week and membership of professional organisations. The Kruskall-Wallis test (KW) was used for most of the analysis and Mann-Whitney U (MW) was used whenever the relationship of gender with item responses was sought. These two methods determine significance of mean rank differences. Contingency analysis was also utilised when possible relationships between demographic variables was suspected.

Table 6.3 A summary of mean and median values for the items in Part A

Item Grouping	Item No.	Median	Mean (± s.d.)*	Sub-Scale Mean* (± s.d.)
1. Patient counselling is subjective and patient-oriented	2.1	4.0	3.81 (±0.95)	
	2.9	4.0	3.78 (±0.85)	
	2.17	4.0	3.86 (±0.75)	
	2.25	4.0	4.45 (±0.60)	
	2.28	4.0	3.81 (±0.69)	**
2. Patient counselling has many benefits				
• Clients/patients benefit from pharmacist's counselling	2.2	4.0	4.09 (±0.76)	
	2.18	4.0	4.20 (±0.55)	
	2.26	4.0	4.00 (±0.70)	
• Patient counselling enhances patient satisfaction	2.3	4.0	4.40 (±0.78)	
	2.11	4.0	3.53 (±0.84)	
	2.19	4.0	4.30 (±0.54)	
	2.27	3.0	2.69 (±0.96)	
• Pharmacists gain personal and professional benefits from counselling patients	2.4	4.0	3.81 (±0.72)	
	2.12	4.0	3.50 (±0.71)	
	2.20	4.0	4.34 (±0.55)	
	2.29	4.0	4.24 (±0.57)	
• Patient counselling enhances relationship with others	2.5	5.0	4.51 (±0.53)	
	2.13	4.0	4.21 (±0.55)	
	2.21	4.0	3.70 (±0.72)	
	2.30	4.0	3.23 (±1.05)	3.92 (±0.70)
3. Pharmacist's accountability with patient counselling				
• Patient counselling is a responsibility	2.6	5.0	4.45 (±0.64)	
	2.14	4.0	3.87 (±1.03)	
	2.22	4.0	4.13 (±0.51)	
• Pharmacists are capable of providing patient counselling	2.7	4.0	4.40 (±0.68)	
	2.15	4.0	4.07 (±0.86)	
	2.23	4.0	3.97 (±0.63)	4.15 (±0.72)
4. Patient counselling is providing written and verbal information	2.8	4.0	3.82 (±0.85)	
	2.16	4.0	3.87 (±0.72)	
	2.24	3.0	2.90 (±1.02)	**

* based on a five-point scale: strongly agree=5, agree=4, not certain=3, disagree=2 and strongly disagree=1.
** sub-scale mean value not applicable due to poor item-total correlation.

6.3.3.1 Subjective and patient-oriented counselling

Pharmacists' responses to statements on patient-oriented counselling were found to relate significantly to practice setting, position and years of practice. In particular, those working in an institutional settings tended to favour provision of unsolicited advice to patients more than those in other settings (KW, H=11.446, $p<0.05$). Those in hospital positions seemed to be more amenable to such counselling than those in community practice, particularly owner/managers and locums (KW, H=14.536, $p<0.05$). The attitude that 'some patients require more counselling than others' significantly related to length of practice (KW, H=16.477, $p<0.05$). This is highly favoured by those who have worked for 1-20 years and least favoured by those with longer practice experience. In addition, those with more than 40 years of practice expressed least agreement with the statement about asking patients personal questions in relation to their medications (KW, H=16.178, $p<0.05$).

6.3.3.2 Benefits of patient counselling

There was no significant difference in responses to items pertaining to patient benefits from counselling except one which stated that counselling could substantially contribute to the improvement of health care. Those who had worked for 20 years or less tended to agree more with such a statement more than others who have worked longer (KW, H=11.070, $p<0.05$).

A significant difference was found with opinions on patient's perception of the benefits of counselling: community pharmacists were more likely to agree that patients perceive the benefits of pharmacists' counselling than those in other practice settings (KW, H=9.010, $p<0.05$). No significant difference was found with responses relating to patients' satisfaction with pharmacists' counselling.

6.3.3.3 Personal and professional gains

There was a general agreement among respondents that there are personal and professional benefits in providing counselling. However, membership in professional organisations contributed significantly to differences of opinions about whether 'provision of counselling brings more people to the pharmacy' (KW, H=6.742, $p< 0.05$). There was greater agreement with this statement from those belonging to four or more professional organisations. The length of practice is significantly related to respondents' affirmation that enhancement of professional status is a benefit of counselling (KW, H=12.504, $p<0.05$). Those pharmacists who had worked for 1-20 years and 31-40 years had the greater tendency to agree with such a statement than those in practice 21-30 years and more than 40 years.

6.3.3.4 Enhanced relationships with others

Female pharmacists were more likely to agree that counselling enhances pharmacist-patient relationships (MW, U=3542.0, $p< 0.05$). Staff pharmacists and locums were in stronger agreement that counselling enables a pharmacist to become a member of the health team; this seemed to be least accepted by those working either as a chief or deputy pharmacist (KW, H=12.964, $p< 0.05$). This is expected because contingency analysis showed that these positions are dominated by females ($\chi 2$=20.765, d.f. = 3, $p< 0.0001$). The opinion that counselling by a pharmacist might result in contradicting physicians had a significant relationship with geographical location; it tended to be more evident with respondents from Northern Tasmania than in the other regions of the state (KW, H=6.394, $p< 0.05$). Contingency analysis of geographical area with gender, position, practice setting and length of practice did not yield any significant result.

6.3.3.5 Pharmacist's accountability with patient counselling

Relationships between pharmacists' responses regarding accountability and demographic variables were determined. Practice setting (KW, H=8.077, $p<0.05$), position (KW, H=17.877, $p< 0.05$) and length of practice (KW, H=18.624, $p< 0.05$) were found to

significantly relate to respondents' perceptions of counselling as a responsibility. Institutional pharmacists, regardless of job position in institutional practice, agreed that counselling is a pharmacist's responsibility. Younger respondents, those with ≤ 20 years in practice, had the stronger tendency to consider counselling as a professional responsibility than their older colleagues. In addition, this younger group of respondents expressed greater confidence in their capability to perform counselling than those who have worked longer (KW, H=15.245, $p< 0.05$).

Involvement in professional organisations relates to respondents' agreement that provision of counselling enhances respect from the community (KW, H=3.597, $p< 0.05$).

6.3.3.6 Verbal and written counselling

There was a variety of opinions among respondents about preferred forms of counselling. Females tended to favour the provision of both written and verbal counselling more than men (MW, U=4068.50, $p< 0.05$). Females were also more likely to provide verbal counselling than males (MW, U=3275.0, $p< 0.05$). A significant difference was noted in the responses of pharmacists in various practice settings, with those working in institutions giving strongest preference for both forms of counselling (KW, H=3631.0, $p<0.05$). The same relationship was observed to occur regardless of job positions in institutional practice (KW, H=21.453, $p< 0.05$). No significant relationship was found between gender and practice by contingency analysis. However, there was a relationship found between gender and position ($\chi 2=20.765$, d.f. = 3, $p<0.0001$). There were more females working as staff pharmacists, pharmacists and pharmacists-in charge, than males. Sixty-four percent of male pharmacists were occupying owner/ manager positions and 17% were locums.

6.3.4 Determinants of the amount of patient counselling

Table 6.4 shows the mean and median values of responses to statements in Part B of the survey questionnaire which looks at possible determinants of pharmacists' amount of counselling. Among those factors which were considered to increase counselling,

respondents agreed on *new prescription, potential drug risk, drug classification* and *patient-asking.* These four items had a common median value of 4.0.

Table 6.4 Determinants of the amount of counselling by pharmacists

Potential Factors	Item No.	Median	Mean (± s.d.)*
1. Factors which could increase pharmacist's counselling			
• perception of patient's information	3.1	2.0	2.62 (±0.89)
need	3.4	4.0	4.33 (±0.58)
• new prescriptions	3.5	4.0	4.14 (±0.67)
• potential drug risk	3.6	2.0	2.19 (±0.78)
• drug category	3.13	2.0	2.59 (±0.87)
• patient-asking	3.10	4.0	3.93 (±0.74)
• presence of patient	3.14	2.0	2.34 (±0.79)
• drug classification	3.17	4.0	3.94 (±0.63)
2. Factors which could decrease pharmacist's counselling			
• mental handicap/ illiteracy	3.2	2.0	2.54 (±0.94)
• absence of patient	3.7	2.0	2.55 (±0.88)
• inability to ask for information	3.8	3.0	3.08 (±0.94)
• perceived medication knowledge of the client	3.9	2.0	2.64 (±0.93)
• repeat prescription	3.11	4.0	3.90 (±0.66)
	3.18	3.0	3.14 (±0.79)
• drug classification	3.12	3.0	3.07 (±0.99)
• physical/medical handicaps	3.15	2.0	2.76 (±0.98)
• chronic medical condition	3.16	3.0	3.13 (±0.87)

* based on a five-point scale: strongly agree=5, agree=4, not certain=3, disagree=2 and strongly disagree=1.

With those conditions expected to decrease counselling, *repeat prescription* had the highest mean value of 3.90 (s.d. ± 0.66) and a median value of 4.0. Pharmacists did not consider mental handicap/illiteracy, physical/medical handicaps, absence of patient, perceived knowledge of the drug by the client as deterrents to counselling as shown by their low mean values (≤ 3.0) and median values (≤ 2.0).

6.3.4.1 Motivating factors

No significant relationship was found between demographic characteristics and pharmacists' responses to some specific factors which could increase the amount of counselling. These factors were: new prescriptions, potential drug risk, over-the-counter category and therapeutic classification. There was a significant difference, however, in the responses between the sexes with regard to perception of information needs (MW,

U=2002.0, $p< 0.05$). Male respondents are more likely than females to acknowledge perception of patients' information needs as a factor in their counselling. Recognition of patient-asking as a motivating factor tended to be stronger among those respondents working at a range of 21-30 and 51-60+ hours per week (KW, H=11.671, $p< 0.05$).

6.3.4.2 Inhibiting factors

Responses to statements concerning patient abilities – mental handicap, illiteracy, inability to ask for information, perceived drug knowledge, physical and medical handicap, chronic medical condition – did not significantly correlate with any demographic variable. Also, there was no significant difference in responses regarding therapeutic classification.

Male respondents were more likely to agree that 'absence of a patient' inhibits counselling (MW, U=2196.5, $p< 0.05$). Those pharmacists working 21-30 hours per week also were more likely to take into account 'absence of a patient' as a factor when compared to those working either shorter or longer number of hours (KW, H=11.630, $p< 0.05$).

Opinions about the provision of counselling to a patient with a repeat prescription significantly relate to gender. There is a greater tendency among males to consider counselling for a repeat prescription an extra task (MW, U=2100.0, $p< 0.05$).

6.3.5 Workplace-related factors affecting counselling

Table 6.5 presents the mean and median values of pharmacists' responses to statements in Part C. The item with the highest mean value, 4.08 (s.d. ± 0.69), was within the 'time' factor. A comparison of sub-scale mean values also showed that the 'time factor' had the highest mean value, 3.58 (s.d. ± 0.91). In contrast, the 'workload factor' had the lowest mean value of 2.44 (s.d. ± 0.90). As for the median values, almost all items belonging to the 'time' and 'privacy' factors had the highest value of 4.0.

Table 6. 5 Workplace-related barriers and facilitators of pharmacist's counselling

Factors	Item No.	Median	Mean (± s.d.)*	Sub-Scale Mean* (± s.d.)
• Time	3.19	4.0	3.83 (± 0.93)	
	3.27	4.0	3.25 (± 0.96)	
	3.31	3.0	3.16 (± 1.06)	
	3.34	4.0	4.08 (± 0.69)	
				3.58 (± 0.91)
• Remuneration	3.20	4.0	3.48 (± 1.08)	
	3.24	3.0	3.07 (± 1.02)	
	3.28	3.0	2.95 (± 1.04)	
				3.17 (± 0.84)
• Privacy	3.21	4.0	3.88 (± 0.74)	
	3.25	4.0	3.28 (± 0.98)	
	3.29	4.0	3.24 (± 0.95)	
				3.47 (± 0.89)
• Workload	3.35	2.0	2.44 (± 0.90)	
	3.22	4.0	3.59 (± 0.98)	
				3.02 (± 0.78)
• Resources	3.26	3.0	2.95 (± 1.02)	
	3.30	3.0	3.10 (± 0.88)	
	3.33	4.0	3.39 (± 1.00)	
				**

* based on a five-point scale: strongly agree=5, agree=4, not certain=3, disagree=2 and strongly disagree=1.
** sub-scale mean value not applicable due to poor item-total correlation.

6.3.5.1 Time

Availability of time as a limiting factor to counselling elicited stronger agreement from those working ≤ 10 hours per week than those who work longer during the week (KW, H=11.195, $p< 0.05$). Opinions regarding 'number of patients attended to during a span of time' as a factor in the provision of counselling were found to link significantly with job position and hours worked per week. Locums were the most likely to agree that the number of patients limit their time for counselling (KW, H=11.789, $p< 0.05$). Contingency analysis was able to determine a significant relationship between job position and hours worked per week ($\chi 2=67.450$, d.f. = 5, $p<0.0001$). Fifty-eight percent of those working ≤10 hours per week were locums.

6.3.5.2 Remuneration

All three statements pertaining to 'remuneration as an incentive for pharmacist's counselling' were most likely to be supported by those holding owner/manager position among all positions in community practice (KW, H=19.738, $p< 0.05$). Males had a greater tendency than females to agree with remuneration as a factor affecting counselling (MW, U=1872.5, $p< 0.05$). In addition, those pharmacists working less than 10 hours and those with more than 50 hours per week were more likely to express the same opinion (KW, H= 12.614, $p<0.05$).

6.3.5.3 Privacy

There was no demographic variables significantly related to privacy other than gender. Females were more inclined than male respondents to consider privacy as a factor in counselling (MW, U=2230.5, $p< 0.05$).

6.3.5.4 Workload

There were significant differences in responses concerning workload with regards to position. Those respondents who worked as pharmacist-in-charge were most likely to agree that workload was a factor in providing counselling (KW, H= 8.213, $p< 0.05$). Sixty percent of pharmacists-in-charge worked 41-60 hours per week ($\chi 2=67.450$, d.f.=5, $p<0.0001$).

6.3.5.5 Resources

The opinion that provision of written material is costly was significantly related to hours worked per week: those who worked for ≥ 50 hours per week had the greater tendency to support such opinion in comparison with those working shorter period of time (KW, H=11.610, $p< 0.05$). Eighty-two percent of those working for 50 hours or more per week were owners/managers who were also responsible for managing the financial aspects of their pharmacy. Females, in comparison with male respondents, were more inclined to offer patients written materials like Self-Care cards (MW, U=1945.5, $p< 0.05$).

6.4 Discussion

The response rate of 57% obtained is considered acceptable to generate generalisations of results. There seems to be a relatively fair representation across demographic characteristics. The distribution of respondents by practice settings and positions were comparable to those obtained by Polack (1990) in a statewide survey of registered pharmacists.

Various authors have different acceptable minimum levels for reliability but an alpha coefficient greater than 0.5 has been recommended as a safe figure. There should be only a moderate correlation among items in a scale to account for internal consistency. If the correlation is too high, there would be much redundancy and a possible loss of content validity. On the other hand, if the correlation is too low, then the resulting scale could possibly end up tapping a number of traits (Streiner and Norman 1989). On the basis of their alpha coefficients and item-total correlation in Appendix 2.1, groups 2 and 3 (benefits of counselling, pharmacists' accountability) of Part A are reliable and could be repeatedly used as scales to measure the specified attributes – benefits of, and accountability for, counselling. Item groups 1 and 4 are not acceptable as scales since their items have poor correlation. This could mean any of the following: lack of definite linear relationship, presence of a curvilinear relationship, poor hypothesis or wording of statements. While the latter two are possible, it would be helpful to note whether the items are simply independent of each other and whether individual items have some relationship with demographic variables. Hence, they are grouped only for the purpose of convenience but were used for the statistical analysis on an individual basis. Except for the group on resources, all the other item groupings in Part C have alpha coefficient greater than 0.5.

6.4.1 Views and attitudes about counselling and related aspects

There was a general view among respondents, especially those who had ≤ 20 years of practice experience, that some patients may require more counselling than others. Whether this is an outcome of the emphasis on clinical pharmacy in education and practice over the last 25 years is not known. However, Juergens and Basara (1994) commented that younger pharmacists, those with less than 30 years of experience, have a more positive view about patient counselling than their older counterparts. In the present study, it was also revealed that asking patients personal questions related to their medications was considered least by those pharmacists with more than 40 years of experience. This could be a manifestation of the 'biomedical' and drug-oriented practice which had dominated the pharmacy profession for many years.

The opinions regarding the provision of unsolicited advice tended to be stronger for institutional pharmacists than for those pharmacists in other settings. A possible reason could be that the nature of the job performed in hospital obligates pharmacists to routinely give advice to confined patients regarding their medications whereas in the community, pharmacists do counselling in a rather more voluntary manner with the permission of the patient. Taylor (1994) noted that a majority of those patients who did not request pharmacist counselling actually did not want any advice.

There was a prevailing positive attitude about the health benefits of counselling to patients, strongest among those pharmacists with less than 20 years of experience. Community pharmacists are more prone to believe that patients could perceive the benefits of counselling than pharmacists in institutional practice. In a community setting, it would be easier to gauge patients' satisfaction with pharmacist's services through regularity of visits and repeated seeking of advice (Briesacher and Corey 1997; Schommer et al. 1995; Martin 1994; Meade 1994; Heffernan et al. 1993; Stratton et al. 1993). However, pharmacists in all practice settings agreed that there is a lack of feedback from patients about their counselling. Also, there is not enough information about pharmacists' abilities to solicit feedback from patients.

A majority of respondents acknowledged the personal and professional benefits of counselling. Increased membership in professional organisations sustains the view that counselling attracts people to a pharmacy. Similarly, younger pharmacists have a firmer belief that provision of counselling enhances professional status.

The enhancement of pharmacist-patient relationship is one benefit of counselling which is perceived more by female than male pharmacists. Staff pharmacists and locums, the majority of whom were women, are more inclined to think that counselling could enhance their role as a member of the health team but not those with higher job positions in institutional practice. This is partly because the latter positions tend to be more administrative and therefore, there could be lesser interaction with members of the health team in terms of collaborative decision-making about individual patients.

It is not known why respondents from Northern Tasmania were significantly more concerned about the possibility of contradicting doctors through their counselling. There is no available explanation on the basis of the data obtained nor any possible relationship between variables which could possibly explain this observation. However, a previous study by Chen et al. (1996) in New South Wales provided detailed baseline information regarding communication occurring between pharmacists and physicians in the community setting. They found that, on average, pharmacist-physician communication was 1 per 400 prescriptions and was centred on drug information. This finding showed that the communication between these health providers has been too limited to warrant stable trust and confidence.

Although a positive attitude existed among respondents about accountability, there was variability in the degree to which they perceive their responsibility over counselling. Those pharmacists in an institutional settings had a stronger belief that patient counselling is a shared responsibility rather than the sole responsibility of the doctor. This is consistent with the findings of Ortiz (1990) in New South Wales that provision of drug information was perceived by community pharmacists as more of a doctor's responsibility than a pharmacist's.

Position was also found to relate with perception of responsibility. Staff pharmacists in the hospitals expressed greater responsibility over counselling than those in other institutional and community pharmacy positions. On the other hand, locums were not as accepting of counselling responsibility as the others. Those pharmacists who worked longer in practice, 21-60 years, did not perceive greater responsibility over counselling than younger pharmacists. This has been related by previous research to an overall positive attitude towards counselling among younger pharmacists (De Young 1996).

Confidence in the provision of counselling tended to be greater among younger pharmacists. This was similar to the findings of Richards and Blank (1997) that older pharmacists expressed less confidence in their ability to provide cognitive services. Position also tends to influence perceived capability of pharmacists to provide counselling. Staff and deputy chief pharmacists were most confident of their counselling capability, followed by owners/managers and pharmacists-in charge, and lastly, by pharmacists, locums and chief pharmacists. The observed lack of confidence among pharmacists in performing patient-specific functions, including patient counselling, has been ascribed in previous studies to emanate from lack of knowledge and skills and specific attitudinal/motivational factors (Richards and Blank 1997; Odedina et al. 1996).

The preference for written or verbal counselling tended to vary with gender, with females more inclined to lead in the provision of both forms and in communicating verbal information. Even practice settings seemed to influence choice of methods: institutional pharmacists were more in favour of combining both forms rather than just providing either form of counselling. The influence of position on the choice of method could be explained by gender composition with job positions having a greater tendency to support both forms of counselling being dominated by females (staff pharmacists, pharmacists-in charge and pharmacists). The differing views on the use of written and verbal counselling is consistent with the findings in previous studies (Lam and Krass 1995; Schommer and Wiederholt 1994; Laekeman and Geerts 1987).

6.4.2 Determinants of the amount of counselling

6.4.2.1 Motivating factors

Only four items – new prescription, potential drug risk, drug classification and patient-asking – were found to significantly influence respondents to provide more counselling. New prescription is already recognised as an important motivator of counselling and has been cited in several studies (Lam and Krass 1995; Schommer and Wiederholt 1994; Ortiz 1990). Schommer and Wiederholt (1994) found that the length and content of communication appears to increase significantly for new prescriptions compared to repeat prescriptions. The amount of verbal counselling by Dutch and Swedish pharmacists also varies with prescription type, in which patients with new prescriptions were given more counselling than those with repeat prescriptions (Berardo et al. 1989). In an Australian study, pharmacy customers were more likely to receive information for new prescriptions than for repeats (Lam and Krass 1995).

In addition to prescription status, patient question-asking was also found to affect the length and content of counselling. Schommer and Wiederholt (1994) reported that it was the most frequently cited determinant of counselling in their study of counselling practices among community pharmacists. For new and repeat prescriptions, the length and content of counselling tended to be greater when the patient asked questions.

In previous studies, potential drug risk and type of medication were reported to affect pharmacists' verbal counselling. Pharmacists consider some drugs to be more critical than others and therefore, may require more verbal counselling and written instructions (Schommer and Wiederholt 1994; Mason and Svarstad 1984). There are certain types of medication for which Australian pharmacists in a previous study were found to provide more counselling such as antibiotics, analgesics, NSAIDS, among others (Ortiz et al. 1989). It was also revealed in the latter study that advice about prescription medication is the most common type of counselling activity in the pharmacies being studied.

6.4.2.2 Inhibiting factors

Only repeat prescription status has been found in this study to inhibit pharmacist's counselling. This did not contradict the findings from several studies which also concluded that pharmacists provided less counselling to patients with repeat prescriptions (Lam and Krass 1995; Schommer and Wiederholt 1994; Ortiz 1990; Berardo et al. 1989). Patient abilities were not prioritised by the respondents as limiting their counselling. Although these issues may pose some communication difficulties as was found by Morrow and Hargie (1987), they were not given a similar degree of importance as repeat prescriptions by the respondents. It is also worth noting that there is a greater tendency among male pharmacists to consider the provision of counselling for repeat prescription as additional work.

6.4.3 Workplace-related factors affecting counselling

6.4.3.1 Time

Time, among other work-related factors, seemed to be a primary concern among the Tasmanian respondents. Those who worked ≤ 10 hours per week and the locums were the groups which indicated time as their main barrier to patient counselling. Time was also a main constraint identified by 87% of pharmacists in a U.K. study (Mottram et al. 1995). The availability of time has also been reported by Lilja and Larsson (1993) to limit counselling by pharmacists despite their positive attitudes towards counselling. The lack of time was also specified by U.K. pharmacists as their first area of difficulty in relation to patient counselling (Morrow and Hargie 1992).

6.4.3.2 Privacy

Second to time, privacy is the factor which affected pharmacists' counselling and was related to the physical layout of the pharmacy. Most of the pharmacies in Tasmania do not have a separate area for counselling and this could be a reason why there is concern about privacy among pharmacists. Female pharmacists tended to be more concerned with privacy than male pharmacists. Disclosure, particularly of sensitive issues, is one aspect

where differences between genders has been observed in communication studies (Dindia and Allen 1992).

6.4.3.3 Remuneration

The issue of remuneration seems to be the main workplace factor among owners/ managers, particularly among the male pharmacists. The lack of financial return was also reported by Ortiz et al. (1992) to affect pharmacists in New South Wales. Remuneration for counselling is tied up with the payment methods prevailing in Australia regarding prescription medications. The Pharmaceutical Benefits Scheme is still an outstanding issue among the professional organisations and the government. While there has been a recent increase in the PBS dispensing fee, it is not known whether it is enough financial incentive for pharmacist, who depend on the volume of dispensed PBS prescriptions, to provide more counselling (Demirian 1997; Kelly 1996).

6.4.3.4 Workload

Workload seems to be a greater concern for pharmacists-in charge rather than for other pharmacists in community practice. The majority of these pharmacists worked for 31-50 hours per week. Existing studies which looked at the workload of pharmacists have contradicting conclusions about the effect of workload on pharmacist's counselling. There seems to be no available information in Tasmania which could provide an explanation as to how workload affects counselling.

6.4.3.5 Resources

Resources, specifically materials for counselling, were more a concern for owners/managers than for those holding other positions in community practice. This is consistent with the earlier result that this group is also concerned with financial remuneration. The balance between the financial interest and the service component of pharmacy practice is a basic task of owners and managers of pharmacies.

6.5 Conclusion

This study was able to determine some attitudes of Tasmanian pharmacists regarding the nature of patient counselling, its benefits, the pharmacist's accountability over its provision and their preferences regarding the form of counselling. Secondly, pharmacists were able to give their opinions about common factors which could determine the amount of their counselling. Lastly, the relative importance to community pharmacists of major workplace-related factors was determined.

Some of the important findings of this study are:

- There is an existing positive view about patient counselling among Tasmanian pharmacists, particularly its benefits;
- Accountability over patient counselling tends to vary with practice setting, position and length of practice;
- Confidence to perform patient counselling is greater among younger pharmacists;
- Gender and position are factors affecting the choice of the form of counselling;
- New prescription, patient-asking, drug category and therapeutic classification tend to increase community pharmacists' counselling;
- Repeat prescription tends to decrease the amount of pharmacist's counselling and
- Time, privacy, remuneration, workload and resources are workplace-related factors which are also related to demographic characteristics such as position, length of practice and hours worked per week.

These findings will be useful as baseline information to understand the context of community pharmacy practice in Tasmania. One limitation, though, with this survey is that it is not possible to clarify the nuances of pharmacists' responses. These findings could be strengthened by future qualitative research in the workplace.

CHAPTER 7

Study 2

Medication Information-seeking Behaviour among Tasmanians

As discussed in Chapter 6, there are four factors which tend to increase patient counselling among Tasmanian community pharmacists. These are: new prescription, patient-asking, drug category and drug therapeutic classification. Among these factors, patient-asking is the only patient-related factor. Patient-asking or medication information-seeking behaviour refers to a person's pattern of seeking medication information from available sources.

The health professionals and written references are considered primary sources of medication information (Culbertson, et al. 1988). Gore and Madhavan (1993) further classified these sources as *expert sources*, such as physicians and pharmacists; and *lay sources* as exemplified by family members and friends. Books and references, being available to the public through news agencies and public libraries, may also be included as lay sources.

Culbertson et al. (1988) found that not many people (7%) use pharmacists as a primary source of medication information when compared with physician alone (47%) and in combination with nurse and physician (39%). The work of Gore and Madhavan (1993) seems to be more optimistic about consumers' consumption of pharmacist as information source. When compared with physicians, family members, friends and colleagues, pharmacists were consulted at about the same frequency (55%) as the physician (54%) within a six-month period. However, the latter study was confined to non-prescription medications.

In Tasmania, a study has investigated how the public perceives the community pharmacist's role in the delivery of health care (Heffernan et al. 1993). It was found that only 21% would

seek the advice of a pharmacist regarding the proper use of medications in contrast with 71.7% of the respondents who would consult a physician. This study showed that the pharmacist is not utilised effectively as a source of information in comparison with a physician. One limitation of this particular study is, it did not include other sources of medication information which are also available to the public.

Using Gore and Madhavan's (1993) classification of expert and lay sources, it is possible to examine medication-information seeking behaviour of individuals in Tasmania.

7.1 Objectives

- to compare how Tasmanian clients utilise different sources of medication information – expert sources (pharmacist, physician) and lay sources (family and/or friends, books and references);
- to determine possible relationships of clients' utilisation of medication information sources with gender, age and employment status;
- to find out whether there are some significant differences between highly active seekers and non-seekers, and between those who are expert sources seekers against those who are considered lay sources seekers.

7.2 Methods

7.2.1 Survey method

A random telephone survey which looked into the opinions and views of Tasmanians about various social, political, economic, education and other related-issues was conducted in September 1995 as part of the present researcher's course in the Department of Sociology, University of Tasmania. The survey, called Tasmania's Future Survey: Wave 2, aimed to find out relationships existing between people's expressed views with some social and economic characteristics such as age, gender and employment status. Tasmanians who were listed in the telephone directory were contacted by random selection by trained social researchers. Individuals who were willing to participate in the survey were asked more than 50 closed

questions about various issues in society. The questions on 'sources of medication information' were assigned question numbers 27a, 27b, 27c and 27d.

7.2.3 Survey design

The four survey questions, answerable by yes or no, are enumerated in Table 7.1.

Table 7.1 Questions on clients' sources of information on medications

Question Number	Question Wording
	Do you usually seek information about your medications from:
21a	• a doctor?
21b	• a pharmacist or chemist?
21c	• books or other reference materials?
21d	• your family and/or friends?

Responses to these four questions were also used to determine socio-demographic characteristics of four distinct groups of medication-information seekers, namely: highly active seekers, non-seekers, expert source seekers and lay source seekers, each of which has its own pattern of utilisation of information sources.

- *Highly active seekers* are individuals who utilise all four sources;
- *Non-seekers* are individuals who do not avail themselves of any of the sources;
- *Expert source seekers* are those who consult physicians and pharmacists only and
- *Lay source seekers* are those who prefer either family members, friends, book or other relevant references as their sources of medication information.

7.2.3 Statistical methods

The data were stored in Fastat 2.0 statistical package and analysed using the same software and Statview 4.0. Frequency tables were used in describing the data and contingency tables, chi-square analysis and non-parametric methods employed in determining relationships

between demographic variables and (1) raw and coded responses as well as (2) patterns of source utilisation.

7.3 Results

7.3.1 Survey respondents

About 2,000 telephone numbers in Tasmania were contacted. A total of 833 individuals willingly agreed to be respondents for the survey. More than 900 did not wish to speak about their views on the telephone and the rest of all the households either had answering machines on or did not have someone present to answer the phone during the time of contact.

7.3.2 Socio-demographic characteristics

The respondents were mostly female (59%), employed (37%) and between the ages of 33 and 57 years old (median = 45.0). A summary of respondents' demographic characteristics is given in Table 7.2.

Table 7.2 Demographic characteristics of respondents

Characteristic	Count (%)	N
Gender		830
Male	331 (39.7)	
Female	493 (59.2)	
Employment Status		809
Employed	316 (37.9)	
Self-employed	120 (14.4)	
Unemployed	39 (4.7)	
Home duties	122 (14.6)	
Student	32 (3.8)	
Pensioner	100 (12.0)	
Retired	80 (9.6)	
Age		820
Youth (<18)	2 (0.2)	
Young Adult (18-45)	386 (47.1)	
Middle Age (46-65)	302 (36.8)	
Elderly (>65)	130 (15.8)	

Contingency analysis showed that there was a significant relationship between gender and employment ($\chi 2$ =67.79, d.f. 5, p<0.0001). A large number of females was bound with home duties while more males were employed. There were no significant findings between gender and age. A significant relationship existed between employment and age ($\chi 2$ =345.5, d.f. 15, p<0.001). A large number of young adults were employed while many among the elderly were pensioners and retired.

More than half of the respondents (N=833) gave positive responses for questions 21a, 21b and 21d. Their sources of information in a decreasing percentage of utilisation are pharmacist (67%), family and friends (66%), physician (63%), and books and references (46%). There is a small percentage of respondents who did not provide answers to questions. The complete list of responses is provided in Table 7.3.

Table 7.3 Summary of clients' responses to questions 21a to 21d

Question Number	Yes Count (%)	No Count (%)	No Response Count (%)
21a	525 (63.0)	275 (33.0)	33 (4.0)
21b	555 (66.6)	262 (31.4)	16 (1.9)
21c	385 (46.2)	434 (52.1)	14 (1.7)
21d	547 (65.7)	267 (32.0)	19 (2.3)

Relationships between each of the independent variables – gender, age and employment status – and the responses for questions 21a, 21b, 21c and 21d were tested for significance using either Mann-Whitney U (MW) for gender and Kruskall Wallis (KW) for age and employment status. It was found that gender had a significant influence in all four responses, MW (U=67509, p<0.0001), (U=68394, p<0.0001), (U=67701, p<0.0001), (U=73730, p<0.002), respectively. The distribution of positive responses by gender is given in Table 7.4.

Table 7.4 Distribution of positive responses by gender

Question	Male (% Yes)	Female (% Yes)
Do you usually seek information about your medications, from		
• a doctor?	55.7	74.4
• a pharmacist?	58.4	75.2
• books and references?	37.4	55.2
• family and/or friends?	62.0	72.2

The relationship of employment status to positive responses was also determined. The result revealed that only the responses for references are influenced by this variable. Close examination of the mean rankings showed that preference for this source of information came from those with home duties, students and the employed in decreasing order (KW, $H=11.690$, $p<0.01$). With regard to age, it tends to relate with the preference for doctor (KW, $H=7.929$, $p<0.01$) or book and references (KW, $H=10.281$, $p< 0.01$). Many among those who prefer doctors are elderly and middle-aged individuals while those who seek references are usually youth and young adults.

7.3.3 Utilisation of source information

7.3.3.1 Expert source and lay source seekers

Table 7.5 compares the gender, age and employment status of those individuals who sought information from expert sources with those of individuals who preferred lay sources for their medication-information needs. Expert source seekers made up 7.6% of the survey population and lay source seekers, a meager 4%. A majority of expert source seekers were females (69%), many of whom were employed, students, pensioners and retired individuals. More than 70% were over 45 years of age. In contrast, lay source seekers were almost 1:1 in male-female ratio, the majority were employed or with home duties, and more than 60% were young adults.

Table 7.5 Demographic characteristics of expert and lay source seekers

Characteristic	Expert source seekers Count (%)	Lay source seekers Count (%)
	n=59	n=31
Gender		
Male	18 (30.5)	16 (51.6)
Female	41 (69.5)	15 (48.4)
	n=61	n=31
Employment Status		
Employed	15 (24.6)	13 (41.9)
Self-employed	-	-
Unemployed	9 (14.8)	3 (9.7)
Home duties	9 (14.8)	8 (25.8)
Student	14 (23.0)	3 (9.7)
Pensioner	14 (23.0)	3 (9.7)
Retired	14 (23.0)	1 (3.2)
	n=59	n=30
Age		
Youth (<18)	-	2 (6.7)
Young Adult (18-45)	16 (27.1)	19 (63.3)
Middle Age (46-65)	21 (35.6)	5 (16.7)
Elderly (>65)	22 (37.3)	4 (13.3)

Statistical relationships between clients' responses were analysed using contingency tables and their chi-square ($\chi 2$) values. It appears that highly significant relationships exist among:

- those who use lay sources (books and references, family and friends) ($\chi 2=61.79$, d.f. 1, $p<0.0001$) and
- those who use physicians and pharmacists ($\chi 2=47.66$, d.f. 1, $p<0.0001$);

7.3.3.2 Highly active seekers and non-seekers

It was also important to determine the characteristics of those who seek medication-information from available sources compared to those who do not seek information at all. Table 7.6 presents the characteristics of these two groups of seekers. Highly active seekers and non-seekers, constituted 24% and 8% of the survey sample, respectively. Highly active seekers were mostly females (75%), many were employed (40%) or with home duties (25%) and more than half were young adults. On the other hand, 62% of non-seekers were males, almost half of whom were working and were mostly young adults.

Table 7.6 Characteristics of highly active seekers and non-seekers

Characteristic	Highly active seekers Count (%)	Non-seekers Count (%)
	n=191	n=63
Gender		
Male	47 (24.6)	16 (61.9)
Female	144 (75.4)	15 (38.1)
	n=192	n=63
Employment Status		
Employed	77 (40.1)	31 (49.2)
Self-employed	-	-
Unemployed	25 (13.0)	8 (12.7)
Home duties	48 (25.0)	10 (15.9)
Student	8 (4.2)	2 (3.2)
Pensioner	20 (10.4)	6 (9.5)
Retired	14 (7.3)	6 (9.5)
	n=189	n=61
Age		
Youth (<18)	-	-
Young Adult (18-45)	98 (51.8)	35 (57.4)
Middle Age (46-65)	70 (37.0)	15 (24.6)
Elderly (>65)	21 (11.1)	11 (18.0)

7.4 Discussion

This study explores how Tasmanians utilise available sources of medication information. The survey sample represents a cross-section of the general Tasmanian population and does not represent people who frequent pharmacies only. The manner of the survey tends to be biased towards those who have telephones and this was considered to be a limitation of this study.

The results showed that Tasmanian respondents, in general, tend to seek prescription medication information from both expert and lay sources, with the pharmacist being sought for information at almost the same degree as the physician (67 versus 63%). It was also found that the respondents regarded family members and friends equally as sources of information. This agrees with the findings of Gore and Madhavan (1993) regarding the utilisation of pharmacists as sources of information with non-prescription medications but greater than the findings of Culbertson, et al. (1988) and Passmore and Kailis (1990) regarding

prescription medications. The relatively high usage of pharmacists as information sources also confirms the positive perception of Tasmanians regarding the pharmacist's role in health care (Heffernan, et al. 1993). However, in comparison with this earlier work, the present study shows a higher utilisation of the pharmacist's advisory role. One possible reason for the difference is that Heffernan's study had a higher percentage of males (52%) in comparison with the proportion of males in this study (40%). It was shown in the present study that gender plays an important role in medication information-seeking.

The pattern of utilisation of the different sources of prescription medication information presented in this study showed that individuals who ask further questions about their medications from the doctors are more likely to seek such information from pharmacists than from lay sources. In contrast, those who mainly seek information from lay sources are less likely to seek information from expert sources. This pattern is partly explained by respondents' gender, employment status and age group.

Age significantly influenced utilisation of the physician as a source of medication information, with elderly and middle-aged individuals most likely to consult them. This result could be associated as well with the knowledge that chronic medical conditions and polypharmacy are more common with the elderly than younger persons (Chapter 2). Youth and young adults are more likely to seek books and other references than to consult expert advice.

As for employment status, it was found to be associated with seeking information from books and references with students, employed and those with home duties likely to use them.

Women tended to seek information from expert sources more than men. This could be partly explained by previous studies which found that frequent pharmacy customers and clinic patients are women and, therefore, have greater opportunity for interactions with doctors and pharmacists (Lam and Krass 1995; NABP 1994; Ortiz et al. 1989). The nature of asking information from expert sources, if to be explained by gender behavioural differences, may also be attributed to men's lesser tendency to disclose negative information about themselves.

Asking questions about medications may elicit empathy and help from the experts which could denote the lesser status of the person asking. Women, on the other hand, appear to be less vulnerable of such status change and therefore, may tend to accept the idea of helplessness and the need for information support (Pearson, Turner and Todd-Mancillas 1991).

As for highly active seekers, they constituted the highest percent (24%) among the four medication information-seeking groups introduced in this work. This group is mostly composed of women, either employed or with home duties, and mostly young adults. This finding fits those of the consumers described by Lam and Krass (1995) as having positive perception of, and experience with, pharmacists' extended services in New South Wales.

Non-seekers of medication information were composed mainly of males, almost half were employed and they were mostly young adults. As was discussed before, a significant number of males were young adults and were also working; whether this is an indication that there is no existing need for medication information in this group or whether these individuals simply prefer not to seek any information despite a need is not known.

7.5 Conclusion

This was a study of the utilisation of medication information sources among Tasmanians and as such, was able to compare how individuals utilise four sources of medication information, determine possible relationships between utilisation patterns and socio-demographic characteristics such as gender, age and employment status and, lastly, demonstrate significant demographic differences between expert source seekers, lay source seekers, highly active seekers and non-seekers of medication information.

Tasmanians do seek information from expert and lay sources regarding their prescription medications. The trend of information-seeking is significantly related to gender, age groups and employment status. The majority of those who seek expert sources are older women

who are either pensioners or retired. Lay source seekers are mostly employed young males. Women tend to be highly active seekers compared with men, who are mostly non-seekers of medication information, regardless of the information source.

These findings will help pharmacists to be aware that patients are capable of seeking medication information available to them, and that these patients could pursue a pattern of utilisation influenced by gender, employment status and age. The recognition of the characteristics of non-seekers should motivate pharmacists to initiate communication regarding particular information needs which the individual patient may not be able to seek in an assertive manner.

CHAPTER 8

Study 3

NIDDM Patient Counselling by Community Pharmacists

8.1 Objectives

- to determine community pharmacists' counselling of specific NIDDM patient cases;
- to compare pharmacists' patient counselling with those of an 'expert panel' and
- to identify aspects of NIDDM, its drug therapy, management and patient care which pharmacists regard as necessary components of their training.

8.2 Methods

8.2.1 Selection of sample

The names of 304 community pharmacists were taken from the list of registered pharmacists in Tasmania obtained from the Tasmanian Board of Pharmacy in 1995.

8.2.1 Survey questionnaire design

A patient-specific NIDDM counselling survey questionnaire in a booklet form was designed based on a review of literature and in consultation with a hospital clinical pharmacist. The first page of the questionnaire stated the purpose and the conditions of the survey. The questionnaire had three parts. Part 1 contained two NIDDM patient-specific cases; Part 2 was a set of questions on NIDDM-specific drug information and training needs and Part 3 consisted of demographic items. A copy of the questionnaire (Q_3) is provided in Appendix 1.3.

8.2.1.1 Part 1: Counselling scenarios

The following were the six scenarios used for the survey questionnaire:

- *Scenario A* depicted a *newly-diagnosed obese* lady who presented her *first* prescription of *metformin* during a *non-busy* hour at the pharmacy.
- *Scenario B* was about an elderly pensioner who came in for a *repeat* prescription of *Daonil*, was familiar with his medication and was interested in switching to a *cheaper brand.*
- *Scenario C* was about a *new* prescription for *sulfonylurea* for a lady who was also interested in buying a *blood glucose monitoring device* during a *very busy* time in the pharmacy.
- *Scenario D* was a scene where a man in his 60's, an asthmatic, was also on inhaler therapy. He came in for a *repeat* of his anti-diabetic medication and presented *a new prescription for prednisolone* due to a recent exacerbation of his asthmatic condition.
- *Scenario E* was about an elderly lady who presented a *repeat* prescription for *sulfonylurea* and was complaining about *recent bouts of weakness and extreme hunger.*
- *Scenario F* was a scene with a diabetic lady who came back from an overseas holiday and requested a *repeat* for her *metformin* prescription but also complained about *symptoms typical of urinary tract infection.*

The above scenarios (A, B, C, D, E, F) were paired to comprise fifteen combinations (AB, AC, AD, AE, AF, BC, BD, BE, BF, CD, CE, CF, DE, DF and EF). Since there were 304 pharmacists on the survey sample, 20 copies of each pair were reproduced to make up 300 and the remaining four were randomly assigned to pairs AD, AE, BC and CD.

In the questionnaire, a list of 15 counselling elements were provided opposite the two scenarios. The elements of counselling included in the list were:

1. name and purpose of medication;
2. dose and frequency of intake
3. duration of drug treatment;
4. directions for use;
5. administrative (price, generic availability, repeats);

6. side effects of medication and what to do with them;
7. possible adverse effects of initiation or change of treatment and what to do about them;
8. interactions with other medications and foods;
9. contra-indications and hypersensitivities;
10. precautions to take while on medications;
11. adherence to diet plan;
12. need for regular exercise;
13. regular blood glucose monitoring
14. check on existing compliance problem and
15. monitoring and actions to take for symptoms of adverse effects.

Pharmacists were instructed to rank these elements from 0 to 2. A response of 0 meant that an element was unimportant or minimally important, a 1 meant that an element was important and an answer of 2 would mean that an element was very important in a given scenario. At the bottom of the list was a blank space provided for any additional elements/advice a pharmacist would like to include in his/her counselling, such as referral to a doctor, but was not covered in the list of pre-set elements.

8.2.1.2 Part 2: Training needs

Using 3 open-ended and 1 closed questions, respondents were asked to provide personal information regarding (1) any specific issues on NIDDM, its drug therapy and patient care about which they particularly needed to know more, (2) past training in NIDDM patient counselling, (3) health professionals they would like as resource persons in training and (4) whether they would be interested to be informed of a possible training program.

8.2.1.3 Part 3: Demographic characteristics

In answering Part 3, pharmacists were asked to tick boxes or fill in blanks pertaining to personal aspects of their practice. The demographic characteristics included were: gender, job position, practice location, post code, length of practice (years) and hours worked per week. Respondents were not required to write their names.

8.2.2 An expert panel on NIDDM counselling

An 'expert' panel was created to provide guidance in the development and evaluation of the questionnaire and to serve as consultants in the setting of 'counselling standard ranks' for the 6 patient case scenarios included in the questionnaire. The panel was composed of a clinical pharmacy lecturer, a hospital clinical pharmacist (diabetes ward), a community pharmacist, resource person in diabetes counselling and a pharmacotherapeutics lecturer. All of the panel members had qualifications and experience in diabetes management and education.

Draft copies of the questionnaire, together with reply paid envelopes, were sent to each of panel members for content and format evaluation. Suggestions about the content, specifically, the choice of elements as well as comments on the format were used to revise the questionnaire design prior to distribution.

8.2.3 General survey

The questionnaires were randomly placed in envelopes and were sent during the period, 15-19 of August, 1996. In addition to a reply paid envelope, a reply slip was provided with the questionnaire for those who would be interested in receiving additional information about a future NIDDM patient counselling program. A one-month response period was allotted for the survey.

8.2.4 Setting counselling standard ranks

Members of the expert panel were sent copies of the six scenarios together with an answer sheet and a reply paid envelope. They were asked to rank the elements in each scenario according to importance. After a week, the answer sheets were returned and responses were compared. The obtained rankings were tabulated and discussed by the group in two separate meetings. The purpose of the meetings was to discuss individual responses, the appropriateness of given elements in specific counselling and the standard rankings. The panel discussed the facets of each scenario and the criteria used for determining the degree of importance. Rational drug therapy principles and patient-specific details were used as basis for the final rankings. A consensus was reached and overall standard rankings of elements for the six scenarios were obtained. The final 'counselling standard ranks' for the six scenarios is provided in Table 8.1.

Table 8.1 Counselling standard ranks for the six NIDDM patient-specific cases

Counselling element	Scenario*					
	A	B	C	D	E	F
• name and purpose of medication	2	1	1	1	0	0
• dose and frequency of intake	2	0	2	2	2	0
• duration of drug treatment	1	0	2	2	0	0
• direction for use	2	1	2	2	2	0
• administrative (price, generics)	0	2	0	0	0	0
• side effects of medications and what to do with it		2	2	2	2	0
• adverse effects of initiation or change of treatment	2	2	2	2	0	0
• interactions with other drugs or food	1	0	2	1	2	0
• contra-indications/hypersensitivities	1	0	1	1	0	0
• precautions to take while on medication	2	1	2	2	2	2
• adherence to diet plan	2	2	1	0	2	2
• need for regular exercise	2	0	0	0	0	0
• regular blood glucose monitoring	1	2	2	2	2	2
• check on existing compliance problem	0	0	0	0	2	0
• monitoring and actions to take for symptoms of hypoglycemia	1	2	2	2	2	2
• other, please specify					referral to doctor = 2	

*A rank of 0 = unimportant or minimally important, 1 = important and 2 = very important

8.2.4 Statistical methods

The data from the returned questionnaires were coded, stored and analysed using Statview 4.0. Descriptive statistics were used to determine trends in the responses in each scenario as well as respondents' demographic characteristics. Significant differences between the experts' ranking of elements for the six scenarios with those of the respondents was determined by hypothesis testing, using non-parametric one sample-sign test. The significance level of $p \leq 0.005$ was chosen for this test to safeguard against the commission of Type I error, which is the rejection of the null hypothesis when the null hypothesis is true (Tilley 1996).

Qualitative responses to specific learning needs in NIDDM counselling and other aspects of training were summarised and were used to formulate training recommendations.

8.3 Results

8.3.1 Rate of return

Of the 304 questionnaires sent to community pharmacists, five were returned because of change of address, two were unanswered since the recipients had retired from practice and 53 were completed. There was a usable response rate of 17.4% (53/304). A breakdown of counts of responses for the six scenarios (A, B, C, D, E and F) was as follows: A (25), B (16), C (17), D (15), E (17) and F (16).

8.3.2 Demographic characteristics

Respondents' demographic characteristics are given in Table 8.2. There was a 1:1 gender ratio among the respondents. More than half were owners/managers (53%) and the rest of the positions were almost equally proportioned (15-16%). A majority of the respondents were working in major cities. About half of them were in the southern part of the state. The

average number of years in practice was 18 (s.d. ± 10.4) and the average hours worked per week were 38.4 (s.d. ± 14.4).

Table 8.2 Demographic characteristics of respondents (Q 3)

Category	Elements	Count (%)
		n=53
Gender	Male	27 (51)
	Female	26 (49)
		n=53
Position	Owner/manager	28 (53)
	Pharmacist-in-charge	8 (15)
	Pharmacist	9 (17)
	Locum	8 (15)
		n=53
Workplace Location	Major City	34 (64)
	Rural Major	8 (15)
	Rural Other	9 (17)
	Remote	2 (4)
		n=51
Area	Southern Tasmania (002)	25 (49)
	Northwest Tasmania (004)	15 (29)
	Northeast Tasmania (003)	11 (22)
		n=53
Years in Practice	01-10	11 (21)
	11-20	18 (18)
	21-30	13 (13)
	31-40+	11 (21)
		n=53
Average Hours Worked per Week	1-20	7 (13)
	21-40	14 (26)
	41-70	32 (60)

8.3.3 Counselling scenarios

Since the median was the measure used for the non-parametric hypothesis testing, their values are given in Table 8.3. The minimum median value was 0 and the maximum value was 2. In hypothesis testing, the counselling standard value for each element in the six scenarios was used as the hypothesised value against the median of the pharmacists' responses for that

element. The null hypothesis statement used was, Ho: *there is no difference between the median and the value of the counselling standard rank for each element.*

Table 8.3 Medians of responses to case scenarios

Counselling element	Scenario					
	A n=25	B n=16	C n=17	D n=15	E n=17	F n=16
• name and purpose of medication	2.0	2.0	2.0	2.0	1.0	2.0
• dose and frequency of intake	2.0	2.0	2.0	2.0	2.0	2.0
• duration of drug treatment	2.0	1.0	1.0	2.0	1.0	1.0
• direction for use	2.0	2.0	2.0	2.0	2.0	2.0
• administrative (price, generics)	0.0	2.0	0.0	0.0	0.0	0.0
• side effects of medications and what to do about them	2.0	1.0	1.0	2.0	1.0	1.0
• adverse effects of initiation or change of treatment	2.0	1.0	1.0	2.0	1.0	1.0
• interactions with other drugs or food	2.0	1.0	2.0	2.0	1.0	2.0
• contra-indications/hypersensitivities	1.0	0.0	1.0	1.0	1.0	2.0
• precautions to take while on medication	2.0	1.0	1.0	2.0	2.0	1.0
• adherence to diet plan	2.0	1.5	1.0	1.0	2.0	1.0
• need for regular exercise	2.0	1.0	1.0	1.0	1.0	1.0
• regular blood glucose monitoring	2.0	2.0	2.0	2.0	2.0	2.0
• check on existing compliance problem	1.0	1.0	1.0	1.0	2.0	1.0
• monitoring and actions to take for symptoms of hypoglycemia	2.0	1.5	2.0	2.0	2.0	2.0

Results of the one sample sign test showed that there were significant differences between the counselling standard ranks and the medians of the pharmacists' responses in six scenarios ($p \leq 0.005$). However, only those significant differences with respondents' medians below the

counselling standard ranks were considered relevant to the study. The elements in which the medians were lower than the standard ranks are listed in Table 8.4.

Table 8.4 Elements with median values lower than counselling standard ranks at $p \leq 0.005$

Scenario description	Element of counselling
Scenario A: Mrs Allwright • new prescription, Glucophage, obese lady, non-busy day	• possible adverse effects of initiation or change of treatment and what to do with them • side effects of medication and what to do with them • precautions to take while on medication
Scenario B: Mr Bluett • elderly pensioner, repeat prescription, wanting cheaper brand than Daonil	• possible adverse effects of initiation or change of treatment and what to do with them • side effects of medication and what to do with them
Scenario C: Ms Clark • new prescription, Melizide, blood glucose monitoring device, very busy pharmacy	• duration of drug treatment • side effects of medication and what to do with them • check on existing compliance problem
Scenario D: Mr Desmond • repeat prescription for Minidiab, new prescription for prednisolone, asthma exacerbation	none
Scenario E: Mrs Evans • elderly lady, repeat prescription for Diamicron, recent bouts of weakness and extreme hunger •	• side effects of the medication and what to do with them
Scenario F: Mrs Faulkner • lady who came back from an overseas holiday, repeat prescription for Diabex, symptoms of urinary tract infection	• precautions to take while on medication • adherence to diet plan • monitoring and actions to take for symptoms of adverse effects

Of the different scenarios, only Scenario D did not have any significant result. This scenario contains a possible drug interaction between prednisolone and the sulfonylurea drug, where an increase in blood sugar may arise. It was expected that pharmacists would be able to

emphasise this by providing a written response noting this problem in the space provided in the questionnaire. However, only two respondents were able to specifically take notice of it. Here are the statements given by these pharmacists: "interaction with prednisolone, possible increase in blood glucose, advice of symptoms, blood glucose monitoring, see GP if...". The other pharmacist mentioned that "prednisolone may antagonise sulfonylurea activity...important to monitor blood glucose and be smart on diet at this time...should liaise with doctor and pharmacists in regard to this".

In Scenarios E and F, where the counselling standard specified 'referral to doctor' as a main point, 73% (8/11) and 70% (7/10) of respondents, respectively, were able to provide this important response.

There was a slight but not significant difference between the number of elements in a 'non-busy' day with a 'very busy' day. With regards to 'new' and 'repeat' prescriptions, there was no difference in the number of counselling elements provided by the respondents.

There were additional responses provided by pharmacists regarding all six scenarios. In *Scenario A*, the following was advised: "see other health professionals, stress weight reduction, urine testing-ketodiastase, offer desirable diet chart, diet plan and exercise, give written information".

In *Scenario B*, respondents suggested – "consult doctor, write label 'to replace Daonil', urine test, generic equivalent, sugar substitution, ensure patients not to take both brands of glibenclamide, ensure understanding of dose equivalence, discard Daonil, reinforce difference in shape and strength".

In *Scenario C*, suggestions were: "Fact cards, other medications?, care with aspirin use paracetamol instead, ask her to return to show correct use of blood glucose monitoring device, use Self-Care card to discuss disease, ask her to come back for necessary counselling".

Scenario D provoked advice on: "daily dose of 5 mg was too quick, check with GP; interaction with prednisolone, possible increase in blood glucose, advice of symptoms, blood glucose monitoring, see GP if..." and "prednisolone may antagonise sulfonylurea activity...important to monitor blood glucose and be smart on diet at this time...should liaise with doctor and pharmacists in regard to this".

For *Scenario E*, the respondents recommended: "see doctor, advise immediate treatment of hypoglycemia, nutrition, drug history, check interactions only when on them, need to know discussion with doctor, after counselling on diet and exercise and if there is no change then see doctor, see doctor about dosage adjustment, blood monitoring required, enquire state of health, other symptoms".

Lastly, respondents gave the following advice for *Scenario F*: "refer to doctor, see doctor ASAP, see doctor for blood test, doctor visit to check for actual infection, see GP for UTI - it may indicate hyperglycemia or kidney problem, enquire sanitary and health condition during holiday, UTI may be lactic acidosis - try URAL-QIA...would assist in both LAA and UTI, urinary frequency may be due to hyperglycemia".

8.3.5 Training needs

8.3.5.1 NIDDM topics

Qualitative responses of respondents were analysed and categorised as follows:

- drug therapy (new drugs, insulin types, drug interactions, contra-indications, hypoglycemia, use of combination therapy, adding new treatment to existing prescription);
- diagnosis and pathophysiology (normal/abnormal blood glucose values, disease prognosis and monitoring, non-diagnosed cases);
- non-drug therapy (glucose level and diet, dietary and nutrition needs, diet requirements, advice given by diabetes educator)
- general issues (advice flowchart, discharge cards from the hospital, refresher course, the lot, general overview revision)

- counselling (patient advice, effective counselling)

8.3.5.2 Health professionals

Pharmacists were asked about their opinions regarding health professionals whom they would like to be involved in a training program in NIDDM counselling. The following responses were generated and according to a decreasing order of preference were: nurse (100%), diabetes educator (92%), nutritionist/dietitian (80%), endocrinologist (68%), pharmacist (42%), podiatrist (36%), general practitioner (32%), ophthalmologist (28%), psychiatrist/psychologist (6%) and physical therapist (4%).

8.3.5.3 Attendance in diabetes-specific training program

Twenty-five (47%) of the respondents signified that they did not participate in any diabetes-specific training. Of those who indicated participation, they mentioned Self-Care program, drug-sponsored training in the use of blood glucose monitoring devices, Pharmaceutical Society of Australia (PSA) continuing education program, clinical training with a diabetes educator, foot hygiene and special diets, PSA diagnostic services lectures, pharmacy undergraduate lectures, visit to diabetic clinic and lectures from Diabetes Australia.

8.3.5.4 Desire for more training information

Forty-one (77%) of the respondents sent back the reply slip indicative of their desire to receive training information regarding NIDDM patient counselling. The names, addresses and telephone numbers of these individuals were recorded for future contact.

8.4 Discussion

8.4.1 Rate of return

The usable response rate of 17.4% is too low to allow concrete generalisation of findings. There were several factors which may have contributed to this low response. For one, the chosen format for the 'counselling part' was the case scenario. It was chosen because of its documented ability to elicit responses relating to decision-making in professional practice, particularly among the medical and allied health professions (Kikano et al. 1996; Sawka et al. 1995; Naylor et al. 1992; Ebell et al. 1991). A review of response rates for research using case scenarios showed that there was a variable response rate for this type of survey from 15 to 87%, with an average range of 60 to 70% (Kikano et al. 1996; Richert-Boe 1995; Sawka et al. 1995; Naylor et al. 1992; Ebell et al. 1991; Dupre 1990). Inquiry with academics who had conducted research in community pharmacy practice revealed that such a method has not been used in previous studies in that setting. Also, the case scenario tends to elicit thoughtful reasoning rather than just checking the respondent's preferences which is perceived to be inconvenient for some individuals. Random inquiry with community pharmacists also revealed that the timing of the survey was during an inventory period and might have clashed with more urgent activities in the pharmacy. With this concern, it was decided to pursue analysis of the data to determine whether there are significant findings, bearing in mind the generalisability limitation. Despite the limited number, there were enough responses for each scenario to perform basic and differential statistics. However, determination of relationships between responses versus socio-demographic variables was not performed due to the problem of representativeness.

8.4.2 Demographic characteristics

There was a 1:1 ratio between the gender of respondents. The proportions by job position had more than half of the respondents being owners/managers while the other three positions were equally represented, each being 15%. Sixty-four percent (64%) of the respondents were

from major cities, rural major (15%), rural minor (17%) and remote (4%). The postcodes were provided but because of the limited number of respondents, the responses have to be divided by telephone area codes instead. Almost half of the respondents were from the southern region. The above demographic characteristics were similar to the results of the survey in Chapter 6. As for the length of practice, respondents were almost equally divided among the four groupings. Sixty percent (60%) of the respondents were working 41-70 hours per week which could also explain the proportion of owners/managers among the respondents.

8.4.3 Counselling scenarios

The means values and the skewness of the responses for Scenarios A to F indicated a non-parametric distribution, making it imperative to use the non-parametric equivalent of the normal t-test, which is the one-sample sign test. This statistic is used for hypothesis testing. In this case, it was used to determine significant differences between the counselling standard ranks and the survey responses. The null hypothesis statement was that, Ho: there is no difference between the median and the value of the counselling standard rank for each element. The level of significance was adjusted to $p \leq 0.005$ to decrease the possibility of committing both Type I and Type II errors which are common in hypothesis testing.

Significant differences between medians of responses and the counselling standard rank for each element were manifestations of two occurrences: one was that, more medians of pharmacists' responses were above the counselling standard rank and the other, was that there were more medians in the responses below the counselling standard rank. Since it was a concern of this study to determine whether pharmacists' attribution of importance to elements was below that of the standard, only those denoting such will be given attention. Hence, in Table 8.4, it became possible to identify elements which pharmacists failed to give greater importance when compared with the set counselling standard.

Counselling a patient about *possible adverse effects of initiation or change of treatment, side effects of a medication and what to do about them and precautions while on medication* were repeatedly significant for some of the scenarios. This finding supports the report of Lam and Krass (1995) about patient counselling provided by community pharmacists in New South Wales where information regarding side-effects was rarely given. Similarly, it agrees with another finding about Dutch and Swedish pharmacists in which they tend to provide less information about side effects and other drug effects (Blom et al. 1993). With a survey on the implementation of OBRA '90 in the U.S., it was also found that more pharmacists provided counselling on dosage, frequency of intake, duration of intake rather than potential side effects and possible interactions with other medications and certain foods (NABP 1994).

It appeared that there were no significant differences between pharmacists' responses and those of the counselling standard ranks when it comes to provision of the non-drug aspect of counselling apart from 'adherence to diet plan'. The recognition of the 'prednisolone–sulfonylurea' interaction by most of the respondents was not apparent in the responses for Scenario D. It was also interesting to note that pharmacists' ranking of importance for this element was either equal to or lower than that of the standard rank.

The lack of significant differences in scenarios where 'availability or lack of time' and 'new or repeat prescription' were included, could indicate that these workplace factors were not measurable by this type of survey. The study of those factors may be taken up using other research methods.

The variety and relevance of the additional information provided by pharmacists regarding other issues they would like to take up with a patient showed that these respondents were more aware of the patients' health needs beyond their need for medication. Furthermore, there seemed to be a great deal of concern over referring the patient to the doctor when they perceive it to be necessary. On the other hand, it could also be noted that pharmacists were not able to attribute greater importance to drug-related issues such as side effects, adverse

effects which were considered by the expert panel of greater importance to certain patient cases.

8.4.4 Training needs

The topics pharmacists indicated tended to be comprehensive. Aspects of drug therapy, some knowledge of diagnosis and disease monitoring, non-drug aspects of diabetes care, counselling and general issues were the bulk of their concern.

Choices regarding health professionals who may be part of their training in NIDDM patient counselling showed that there was a strong preference for the nurse, diabetes educator and nutritionist/dietitian. This aspect was included in the survey to determine whether pharmacists were aware of the multidisciplinary nature of this area in patient counselling. A low preference for the psychiatrist/psychologist was evident. Recently, it was emphasised that there was also a need for pharmacist to understand the psycho-social aspects confronting diabetics and those with chronic lifestyle diseases (Dunn 1996; Van Veldhuizen-Scott and Popovich 1994).

Almost half of the respondents did not attend a diabetes-specific training program. The programs mentioned by those who had previous training were varied and were provided by professional organisations, drug companies and also as part of undergraduate pharmacy education. It appeared that some of the programs were very specific to an aspect of diabetes such as podiatry or use of blood glucose monitoring devices. Patient-specific diabetes education has not been mentioned.

8.5 Conclusion

The present study was able to determine some community pharmacists' counselling of specific NIDDM patient cases. Results showed that pharmacists' attribution of importance to counselling elements varies depending on the nature of the counselling scenario. Overall, pharmacists' rankings of counselling elements did not differ much from those of the expert

panel except for (1) possible adverse effects of initiation or change of treatment, (2) side effects of a medication and what to do about them and (3) precautions while on medication, aspects which fewer pharmacists had considered in their NIDDM patient counselling. Important information about pharmacists' previous training on diabetes, their topic preferences and other training considerations were also gathered in this work.

CHAPTER 9

Study 4

Status of NIDDM Patient Counselling by Key Health Professionals

9.1 Objectives

- to identify and describe the counselling services available to NIDDM patients in Tasmania;
- to identify areas of deficit and difficulties in NIDDM patient counselling encountered by health professionals and
- to determine perceptions of other health professionals about the role of the community pharmacists in NIDDM patient counselling.

9.2 Methods

As was mentioned in Chapter 6, the nature and extent of NIDDM patient counselling by health professionals in Tamania was not known. To be able to gather sufficient information about this aspect would necessitate the use of qualitative research methods. As such, it was not possible to set the sample size *a priori* but rather this aspect will be determined as the work progresses. The present work followed the steps suggested by Morse and Field (1996) and Miles and Huberman (1994) in conducting ethnographic research. A brief description of the methods is provided together with their procedures.

The main qualitative method used in this study was *ethnography*. This method, rooted in anthropology, involves the study of perspectives, perceptions, actions and meanings of people who share the same culture (Harding et al. 1990). The major data collection strategies associated with ethnographic research are interviews, participant observation, field notes and documentation collection. Of the different kinds of ethnographic methods, focused ethnography was used in this study. *Focused ethnography*, as a concept, investigates the behavioural norms, practices and the common 'language' of individuals who are exposed to the same experiences, settings and events. Compared with classical ethnography, the topic of research in focused ethnography is already selected before data collection commences. The application of this method to the present study was in the

observation of the behavioural norms, practices and experiences of health professionals in providing patient counselling to NIDDM patients.

9.2.1 Sampling method

Qualitative sampling usually makes use of a small sample size of people, nested in their context and studied in depth. In this study, *purposive* sampling was chosen. Comparable subgroups (eg. in general medical practice or podiatry) were identified and cases or individuals in a subgroup were selected based on their ability to inform the research according to its theoretical requirements. This method was aided by another sampling method, *snowball* or *chain*, in which the identification of the cases in a subgroup was made through social contacts who know which cases or individuals were information-rich (Miles and Huberman 1994).

9.2.2 Data collection methods

9.2.2.1 Participant observation

An interview is considered a form of *observer-as-participant* type of participant observation in ethnographic research. A *semi-structured interview* was used in this work. This method, according to Morse and Field (1996), is appropriate when the researcher knows most of the questions to ask but requires participants to express their answers based on how they view and understand the phenomenon in question. The semi-structured questionnaire in this study, properly known as an interview schedule, was made up of main and probe questions. They were open-ended questions, the arrangement of which was done in a logical manner.

The questionnaire (Q_4) designed by the researcher for the semi-structured interview contained the following topics:

- specific role of the profession in NIDDM counselling;
- personal activities and institutional projects related to NIDDM counselling;
- outcomes of services;

- feedback from patients;
- difficulties in counselling (process, patient, outcomes);
- deficit areas in NIDDM counselling
- multidisciplinary composition of diabetes health care and
- perceived role of pharmacist in NIDDM counselling.

The draft of the interview schedule was referred to, and discussed with a sociology researcher and a pharmacy academic for comments and suggestions. Constructive suggestions were used in improving the format and wording of the questions. The final questionnaire contained eight open-ended questions. A copy of the questionnaire is provided in Appendix 1.4.

9.2.2.2 Field notes

Field notes consist of jotting down salient points that are reworked later in detail. They take the form of a reconstruction of interaction, short conversational excerpts or description of events and are used to supplement other data-gathering methods. They are descriptive accounts in which the researcher objectively records what is happening in a setting (Morse and Field 1996). The present researcher used a 'contact summary form' to record the person or group, place, date and the salient points of visits with their specific themes or aspects (Miles and Huberman 1994).

9.2.2.3 Written documentation

Documentations refer to a wide range of documents obtained from the site such as meeting agendas, evaluation reports, newspaper articles, budgets and brochures, among others. 'Document summary forms' were designed and used by the researcher to record the name, significance and a description of the document obtained.

9.2.3 Data analysis

Data analysis in qualitative research is not limited to the analysis of the objective data but also examines the cognitive processes and development being undergone by the researcher

as the work progresses. Morse and Field (1996) identified four cognitive processes that accompany the steps in data analysis:

- comprehending – 'making sense' of the data obtained;
- synthesising – describing the norms, patterns and variations in the data by analysing categories sorted by commonalities from notes and transcripts;
- theorising – systematic selection and 'fitting' of alternative explanations against the data until the best 'fit' that explains the data is obtained and
- recontextualising –developing the emerging theory so that the theory is applicable to other settings or to other populations.

The above processes were necessary for the analysis of objective data and this aspect made use of the researcher as an instrument in data analysis.

Overall, there were three major steps taken by the researcher in the analysis of data: data reduction, data display and conclusion drawing/verification (Miles and Huberman 1994).

Data reduction involved the selection, simplification, abstraction and transformation of the data from interview transcriptions and written notes. This was followed by the preparation of *data displays.* Displays refer to the organised, compressed assembly of information to allow conclusions to be drawn. Most of the data were organised in tabular forms, as summaries, according to logical grouping and sequence. After the data were organised, commonalities, patterns, explanations, and propositions were determined and written as narrative statements. The emerging conclusions were tested for their validity by verification with related literature.

9.2.3.1 Interviews

Transcription was the first step taken to prepare the interview data for analysis. With the aid of a word processor, accounts of the interviews were written according to the words of the participants. Individual transcriptions were checked against recorded accounts and were sent to each participant for checking. This step is necessary to maintain the internal consistency of data (Morse and Field 1996).

Question analysis

Responses to each question were reviewed and sub-categories were identified by content analysis. Content analysis involves the identification of common words, phrases or themes (coding) and then grouping them together to form two or more sub-categories. A summary in tabular form was prepared (Appendix 4.1). In this summary, responses to the interview questions were arranged according to each of the interview questions.

Formulation of tentative propositions (theories)

The arrangement of the 'response phrases' facilitated the identification of conceptual relationships among the responses. The conceptual relationships identified were compared with existing theories in the literature and also with the findings of other works in the same area, particularly those involving the provision of health care to NIDDM patients.

9.2.3.2 Field notes

Personal observations about the participants, the setting and the activities other than the interview were recorded in contact summary forms (Appendix 5.1). The recorded observations of the researcher were referred to in the formulation of conclusions, in conjunction with the interview summary (Appendix 4.1).

9.2.3.3 Written documentation

Some settings such as institutions, organisations and private practice settings were sources for written documentation – brochures, hand-outs, forms – which describe the types of services offered. Documentations, according to research significance, were collected in several of the interview settings. They were used to compare verbal accounts of the participants in the interview and to verify conclusions emanating from the data analysis and described by narrative statements.

9.2.4 Data storage

Questionnaires used in all interviews, written observations and documentations obtained were kept in labelled folders by the researcher. All transcriptions, data displays, summaries, reports were stored as files in Word 6.0 for the Macintosh which could be retrieved conveniently for further analysis.

9.3 Results

9.3.1 Sampling

Guided by a set of research questions, the first step taken by the researcher was to obtain an overview of the provision of health care services for diabetes patients. In December 1995, a scheduled visit was made to the International Diabetes Institute in Kooyong, Victoria in which an interview was conducted with the Head of the Patient Counselling Unit. Pertinent ideas and materials about patient counselling and comprehensive diabetes care were obtained from this meeting. Problems encountered in the provision of health care, together with professional, social and economic concerns are also taken up in the discussion (Appendix 5.1).

The second step was to make informal inquiries about institutions and organisations involved in diabetes counselling in Tasmania. Academics and some health care providers were consulted about existing diabetes services in the State. The first contact was made with the Diabetes Australia (DA) officer in Hobart in April 1996 in which a short interview was conducted to determine the roles and functions of DA in Tasmania (Appendix 5.1). Written materials about the services offered by the DA in the State were obtained. From the brochure entitled "Your Diabetes Health Care Guide", a listing of health professionals working in diabetes and therapeutic management was obtained (Appendix 6.1). The following health professionals were on the list: family doctor, specialist, dietitian, diabetes educator, pharmacist, social worker, podiatrist and community nurse (Diabetes Australia 1996). By purposive sampling, it was determined

that representatives from these professions be included as participants in the study and that participants from Hobart and Launceston be represented since the health services in the State are concentrated in these two cities.

Using the snowball technique, names of some professionals were obtained from DA, health professionals at the Royal Hobart Hospital and from professional organisations. Through conversations with these sources, it was made clear that individuals who were directly involved in the care of NIDDM patients were the preferred participants in the study.

Names of general practitioners, diabetes educators, nutritionists and a podiatrist were referred by the above sources as appropriate participants in the study. Through subsequent interviews with some of these individuals, other service providers, such as the Northern Region Diabetes Centre and its staff, became known to the researcher.

These individuals were first contacted by phone and were informed of a formal letter to be sent about the study. A letter of introduction stating the purpose and nature of the research, a copy of the guide questions for the interview, an informed consent form and a reply paid envelope were sent to each possible participant. Returned consent forms were gathered and additional telephone contacts were made regarding interview appointments at their respective workplace. Interview appointments were made during the period April-May, 1996. The number, profession, location of practice of, and codes for the study participants are summed up in Table 9.1.

Table 9.1 Number, location and date of interview of study participants

Profession	Number of participants	Location of practice	Date of Interview
General Practitioner (GP)	2		
• GP 1(community centre)		Hobart suburb	10-3-96
• GP 2 (private practice)		Hobart	5-6-96
Diabetes Educator (DE)	5		
• DE 1 (health organisation)		Hobart	3-5-96
• DE 2 & 3 (hospital)		Hobart	24-4-96
• DE 4 & 5 (diabetes centre and hospital)		Launceston	28-5-96
•			
Nutritionist/Dietitian (ND)	1		
• ND 1 (public and private practice)		Hobart	23-4-96
Podiatrist (PD)	1		
• PD 1		Hobart	22-4-96
Social Worker (SW)	1		
• SW 1		Launceston	28-5-96

9.3.2 Data collection

All the interviews were held in the workplace on schedule except for those with the nutritionist and one general practitioner. Thirty to forty-five minutes were spent for each interview. Notes were taken and additional documents were collected whenever possible.

The interviews with the Northern Region Diabetes Centre staff were preceded by the researcher's attendance in a staff meeting where a number of patient cases were discussed. Several people who were not part of the interview segment were present. The members of the multidisciplinary team in attendance were: two diabetes educators, a dietitian, an endocrinologist, a part-time nutritionist, a part-time podiatrist and a social worker. An open discussion by the researcher with some of the staff members followed after the meeting. Historical information about the establishment of the centre was obtained from

the staff members. The following day, a program called "Launceston Larrikins" for elderly diabetics was also observed after the scheduled interviews.

9.3.2.1 Interview summary

The ten interview accounts were first transcribed into narratives. The responses were sorted by question numbers and then classified into categories, combining similar responses on the basis of words and phrases and themes within each profession. Sub-categories were identified by content analysis and written as a Word 6.0 file in the form of a table. The resulting data display is presented in Appendix 4.1 (Q_4 Interview Summary). Although the data was reduced to phrases, the researcher tried to retain many of the participants' original terms and explanation to guide the succeeding analyses.

Appendix 4.1 shows the categories in columns: (1) professional role, (2) activities/projects, (3) outcomes/feedback of services, (4) counselling difficulties, (5) counselling deficit areas and (6) perceived pharmacist's role in NIDDM counselling. Compared with the eight questions in the interview questionnaire, there were only six categories in the data display. In the table, the responses regarding the multidisciplinary nature of NIDDM counselling (Question 7, Appendix 1.4) were not included since all the participants recognised the multidisciplinary nature of NIDDM patient counselling. The responses on feedback (Question 4, Appendix 1.4) were combined with the responses on outcomes in the same column, for the purpose of convenience.

Roles of health professionals

Appendix 4.1 outlines the perceived roles of health professionals who participated in the study. Each of them had a specific contribution to the overall management of diabetes. The roles ranged from general to specific care with the general practitioner and diabetes educator expected to provide general counselling on diabetes care. The podiatrist, nutritionist and social worker had more specialised roles in diabetes care.

Activities and projects

The kinds and magnitude of activities performed by individual practitioners and projects organised in an institutional setting for NIDDM patients varied widely. In Hobart, there was a concentration of counselling activities at the hospital. The hospital's diabetes educators conducted various programs for various individuals, groups, communities, organisations and other institutions and were unable to cope with the demand for their educational services. On the other hand, a diabetes educator in a health organisation reported not having enough patients for group counselling events. This is despite the fact that the organisation had a range of programs for individuals and groups.

In general medical practice, GP1, who worked for a community health centre, had a regular annual education program for diabetic groups and was involved with the distribution of handouts and the 'diabetes book'. The centre itself had community nurses who provided individual counselling to newly-diagnosed NIDDMs. GP2, a private practitioner, had more individualised counselling programs for her patients but none for groups.

The podiatrist and the nutritionist were both in private practice with the latter having a part-time job with a government health office as well. Their activities were not limited to individual counselling; they were also involved in group counselling on a limited basis.

The diabetes centre in Launceston had a comprehensive set of programs for their clients in the Northern Region, both on a group and individual basis. The staff catered to various needs and aspects of patients' treatment and management. In contrast with the hospital-based diabetes education section in Hobart, their patients were not affected by the 'hospital nature' of their services since their building is separated from the hospital compound.

A summary of known counselling services in Hobart and Launceston within the knowledge and domain of the participants is given in Table 9.2

Table 9.2 Available educational programs offered by study participants in Hobart and Launceston according to nature of provider

Individual health professional	Hospital/ health organisation	Diabetes centre
General Practitioner • one-to-one counselling • counselling on lifestyle modification • quarterly and annual physical examination and assessment of control • annual education program Podiatrist • annual vascular and neurological assessment for diabetics • group education sessions Nutritionist • one-to-one nutrition counselling	RHH diabetes education • newly-diagnosed NIDDMs • diabetes awareness programs • education of carers and handicapped diabetics • gestational diabetes program • one-to-one counselling • telephone counselling • home visits/ video hire • translation sessions Health organisation • diabetes support sessions • diabetes awareness programs • one-to-one counselling • staff education in nursing homes	Northern Region Diabetes Centre • new referrals group • in-patient counselling • social support group • "caring for my diabetes" follow-up group • age-specific support group • cooking demonstration • video hire • distribution of diabetes gadgets • co-ordinated activities with Diabetes Australia

Outcomes of and feedback on services

All participants expected positive outcomes from their counselling in the form of increased knowledge, positive attitudes and behavioural changes on different aspects of diabetes treatment and management. A common goal was the prevention of complications and improved health.

Opinions about patients' feedback and how it is elicited varied with each participant. One general practitioner received verbal appreciation of services and positive responses from a physician-conducted patient satisfaction survey. A copy of this form is provided in Appendix 6.1. The podiatrist obtained verbal feedback from patients by enquiry. For groups, she used questionnaires to gather feedback. For the nutritionist, verbal feedback was only obtained from those who had follow-up visits. Formal feedback was part of the diabetes educators' assessment at the Royal Hobart Hospital but as for the diabetes

educator in the health organisation, it was mentioned that there was "very little feedback" from the public about the counselling services.

9.4.5 Counselling difficulties

One area of interest is the account of the difficulties encountered by each participant in his/her counselling practice. A summary of counselling difficulties broken down into sub-categories is provided in Table 9.3.

Table 9.3 Counselling difficulties identified by health professionals in the study

Category	Counselling difficulty
Provider-related	• motivational drift in the follow-up of patients • variable counselling performance among physicians • inadequate number of practitioners (nutritionist, social workers • provision of wrong or inadequate information to patients • poor perception of information needs of patients
Process-related	• lack of public information about available public services for diabetic patients • cost (private consultation, blood glucose meters) • physical location (eg. with stairs) or setting (eg. hospital) • access to services (eg. rural) • appointment problems (eg. hospital)
Patient-related	• language and cultural barriers, depending on practice setting • health beliefs • literacy level • psychological and emotional problems including poor coping mechanisms • withholding of relevant information • multiple health problems • unhealthy habits (eg. smoking)

Deficit areas in counselling

Each participant was asked what areas he/she thought were not taken up adequately in his/her counselling of NIDDM patients. Identified areas included diet, exercise, footcare, blood pressure control, blood glucose monitoring, use of devices, hypoglycemia, use of medications, counselling tailored to patient's needs and 'what to do during sick days'.

Perception of pharmacist's counselling role

Participants gave many views about a pharmacist's role in NIDDM counselling. Some focused on pharmacist's drug advisory role:

"Community pharmacists could keep an eye for patients on multiple drugs"

"...emphasis on the proper time of medication intake, in relation to meals"

"...drug information including presence of sugar in some preparations...interactions"

"Though pharmacists may not have the time or regular practice to check meter or pen techniques, it would be helpful if they could do so"

Others considered the health promotion role:

"They can promote diet principles"

"A pharmacist could help a patient understand that NIDDM is 'real' diabetes and that they are prone to develop same complications as the IDDMs"

"...reinforce the need for vascular and neurological assessment important in diabetes control"

Some valued their being a point of referral for health care:

"As part of the referral system, they could also pick up aspects of the patient's condition which will require help from other health professionals"

"Patients could be advised to check with their GPs or referred to other health professionals when they sense patient's needs"

"They may discuss client's medication problems with a physician because of similarity in educational background"

9.4 Discussion

9.4.1 Sampling

The sample consisted of the ten individuals who were identified by purposive and snowball sampling methods. These participants were considered qualified to inform the research, on the basis of the richness of the data obtained. The data gathered seemed to be adequate for the purpose of the research, that is to get a description of the available NIDDM counselling services in the two major cities of Hobart and Launceston. The findings were also able to bring out general points about the counselling practices of various health professionals. The limitations of the study were (1) the data obtained were not capable of describing health services in rural and remote areas and (2) the description of counselling services was only for those health professions represented in this study since there were no specialists among the participants. Thus, the context of NIDDM patient counselling in this study is bound by those limitations.

9.4.2 Health information networks

The following illustration, Figure 9.1, shows a representation of relationships of the key health professions involved in the counselling of NIDDM patients in Hobart. The general practitioner assumes the overall coordinator role in diabetes care. One physician in the study reasoned that since "a GP has the advantage of knowing where to send people, referral has to be to a GP". It should be noticed that referrals to other health services emanate from the general practitioner and feedback comes from other health professionals to the physician in the form of patient assessment reports. Other than with the general practitioner, there seems to be a weak interprofessional referral among the other health care providers. With the recent implementation of Co-ordinated Care Trials in Australia, it is expected that communication among health professionals would improve. Also, care for those with complex or chronic conditions such as diabetes could be coordinated among them (Emerson 1997; Phillips 1995). It has been inferred in this study that interprofessional support is desired by the participants regarding the care of NIDDM patients.

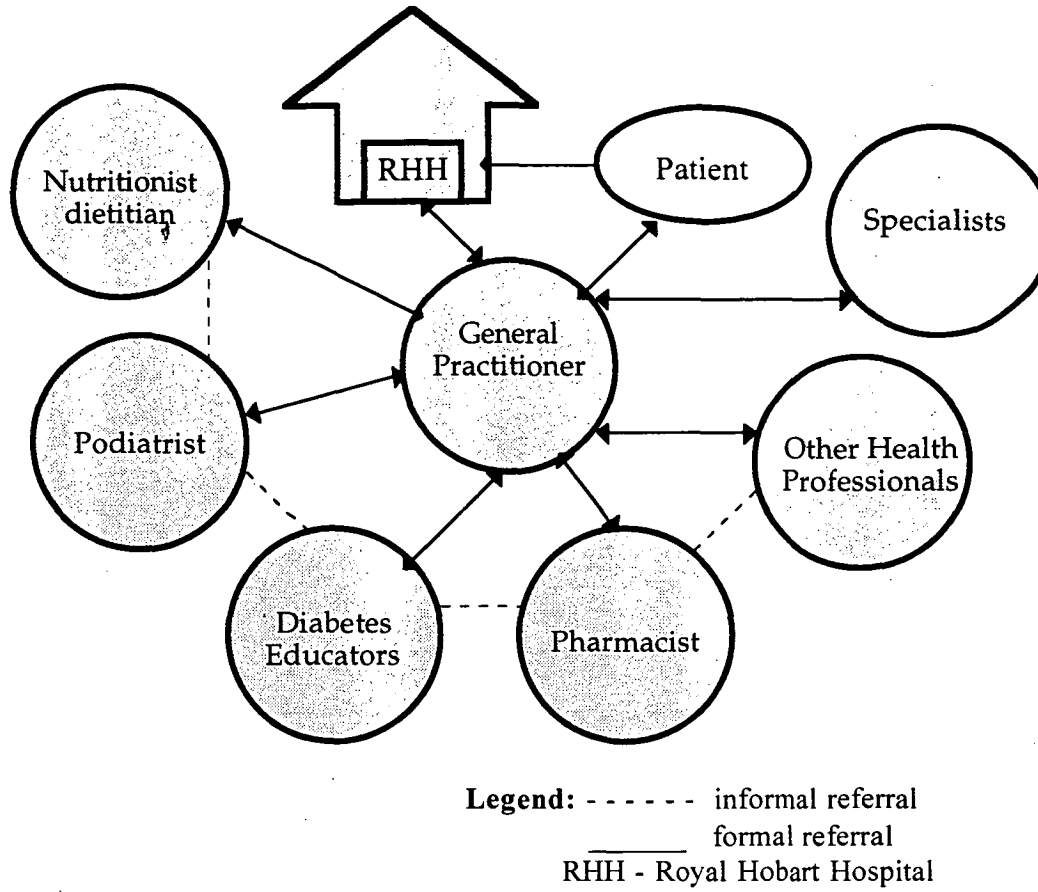


Figure 9.1 Representational relationship among key health professionals involved in NIDDM patient counselling in public and private practice settings in Hobart

A close-knit relationship seemed to exist in the Northern Region Diabetes Centre in Launceston (Figure 9.2). NIDDM patients are referred to the diabetes centre by their general practitioners and the Launceston General Hospital medical staff. In the diabetes centre, a patient's case is discussed among the members of the health team and selection of a proper intervention by the right health professional is agreed upon by the team. For example, in one of their meetings, a patient case was discussed:

> The obesity problem of Patient Y was referred to the nutritionist. Through the discussion, it appeared that a psycho-social problem besets Patient Y. This problem has to be resolved first and so, he/she will be advised to see the social worker. Progress of the intervention of the social worker will be discussed in a future meeting. Only then will a decision be made whether Patient Y can proceed to see the nutritionist or will still be under the care of the social worker (Field note, 27 May 1996).

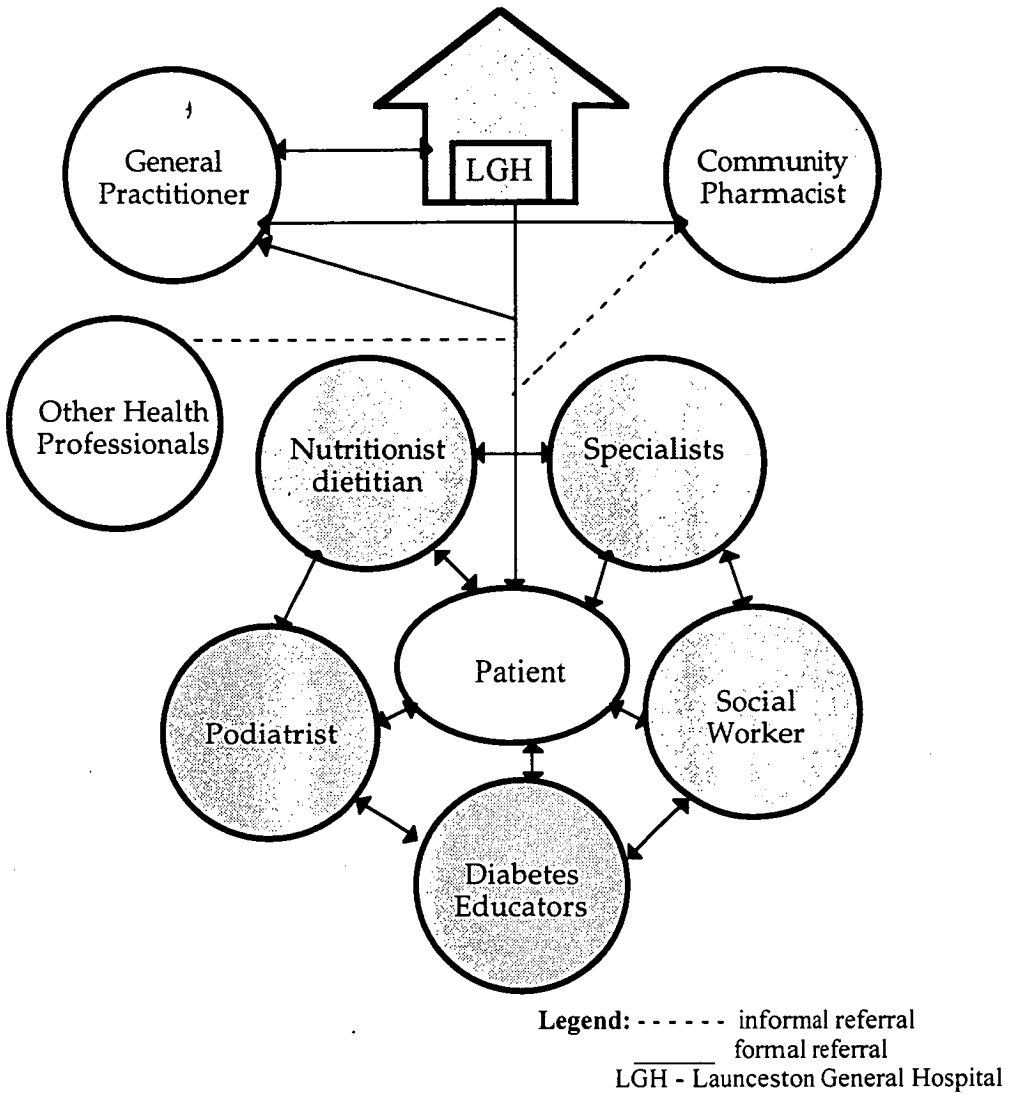


Figure 9.2 Representational relationship among key health professionals involved in NIDDM patient counselling in public and private practice settings in Launceston

The provision of services for diabetic patients in the Northern Region Diabetes Centre had the advantages already described in other multidisciplinary diabetes care settings (Basa and McLeod 1995; Comi 1991; Barth et al. 1990). One is, the services were co-ordinated to serve specific needs, ranging from medical to psycho-social needs. There was a definite link between health professionals and the patient. The specific needs of the patients were being looked after from various health perspectives and an appreciation of the roles and unique contribution of each profession in the health team was apparent. Despite these advantages, staff members of the centre still expressed concern over the low

utilisation of their services since they have not reached the majority of NIDDM patients in the region which was estimated to be 5,000 as of May, 1996. One of the roles they envisioned pharmacists in the region to fulfil was to "...help by referring identified diabetic patients to the Diabetes Centre" and "people who purchase blood glucose meters [from the pharmacy] may be referred to the Diabetes Centre for proper education".

This study found that there are a number of health professionals and health care services in the state for NIDDM patients. The provision of services, however, differs between Hobart and Launceston. The presence of a diabetes centre in Launceston enables the provision of accessible, comprehensive, multidisciplinary health care for NIDDM patients in the region. In contrast, the health care services for diabetic patients in Hobart appeared to be dispersed and less co-ordinated despite their number and availability.

The value of a multidisciplinary approach in the treatment and management of diabetes has been underscored in previous studies. A team approach was utilised as an integral part of preventing diabetes complications (Falkenberg and Finnstrom 1994). Significant and sustained metabolic control was also associated with integrated medical and educational interventions (Day et al. 1992). In other studies, the failure of the physician to link with other health care providers such as a diabetes educator was considered a negative factor in therapeutic management (Peterson 1994).

With the referral set-up in Hobart, it appears that patients have a greater responsibility in seeking specific health information or services on their own. Health information-seeking in itself tends to vary among groups and populations. This variation has been associated with both personal and demographic characteristics (Kennedy et al. 1991; Rakowski et al. 1990). Gender, for one, has a significant role in health communication and information-seeking (Gabbard-Alley 1995). As for the present, health information-seeking behaviour of NIDDM patients in the state is not known.

With regard to the role of the community pharmacist, there is an apparent need for their active involvement in NIDDM counselling, both in the Hobart and Launceston areas. Figures 9.1 and 9.2 showed that community pharmacists are not directly involved in the

care of these patient groups, in a structural sense. Participants in this study had perceived the role of the pharmacist positively, not only in providing drug information but also in a health promotion and referral roles. The gaps in the provision of NIDDM counselling in Hobart and Launceston indicated opportunities for community pharmacists to increase their contribution to the care of NIDDM patients.

9.5 Conclusion

This study was partly able to describe available NIDDM counselling services in Tasmania offered by participants from five key health professions in Hobart and Launceston. The study was not able to cover counselling services in the rural and remote areas of the state and therefore, the context will be limited only to services in the two major city centres. A diabetes centre has many advantages over other sources of diabetes education because of its multidisciplinary nature.

The identification of gaps in the provision of counselling, both at the inter- and intra-professional levels, was helpful in determining the potential role of pharmacists in the care of NIDDM patients. Deficits in the content of counselling could be used as a guide in directing pharmacists' continuing education in NIDDM patient counselling. The implications of the findings of this study on pharmacy practice and training are summed up in Appendix 4.1.

CHAPTER 10

Study 5

Information and Resource Needs of Non-insulin Dependent Diabetes Mellitus Patients

Patient-asking was one of the factors that could encourage a pharmacist to provide more counselling (Chapter 6). However, individuals vary in their information-seeking behaviour and such behaviour has a significant relationship with socio-demographic characteristics (Chapter 7). As there are many sources of health information for diabetic patients as was discussed in Chapter 9, it would be helpful to know how these sources of information are being utilised by non-insulin dependent diabetes mellitus patients and whether their information needs are being met.

10.1 Objectives

- to determine the knowledge level about diabetes and its management among NIDDM patients;
- identify health information needs of this particular group of patients;
- to determine patients' pattern of utilisation of health information resources and
- to determine relationships between health information needs or pattern of utilisation with socio-demographic characteristics.

10.2 Methods

10.2.1 Selection of participants

The NIDDM patients who were admitted to the medical and surgical wards of the Royal Hobart Hospital during a six-week period in September to October 1996 were chosen as participants for this study. The names and demographic characteristics of patients were obtained from three sources: (1) members of the hospital pharmacy department who were

doing clinical rounds in different wards, (2) current patient database located at the pharmacy department and from (3) current patient records held in respective wards. Medical and surgical wards included were Wards 2B, 2C, 2D, 2E, 3B, 3C, 3D, 3E, NSU, 3GW, 3GE and 5G. Patients in the intensive care unit and the psychiatric wards were not included in the survey.

The exclusion criteria used for the patients' interviews were: (1) patient's expression of decline to be interviewed, (2) difficult physical condition, (3) reduced ability to communicate verbally, (4) dementia, depression or state of confusion, (5) presence of life-giving support and (6) isolation. NIDDM patients who were found to be about to be operated on, in critical condition, were having trouble with verbal communication, were psychologically disturbed or were attached to a breathing apparatus or other machines were therefore, automatically excluded from the survey.

10.2.2 Survey questionnaire design

The survey questionnaire, administered through an interview, was a combination of closed and open questions. A copy of the final questionnaire (Q_5) is provided in Appendix 1.5.

10.2.2.1 Part 1: Personal information

The questionnaire was divided into three parts. Part 1 consisted of items on demographic characteristics, particularly: age, gender, ethnic group, reason for admission, year NIDDM diagnosed and area of residence.

10.2.2.2 Part 2: Information needs and information sources

Part 2 was questions on information needs and information sources. The questions comprising Part 2 consist of asking patients (1) what aspects they know about diabetes, (2) from whom and where they get information about diabetes, (3) whether they had received information from specified health professionals without their asking for it, (5) how much

information was received and by what manner, (6) their perceived knowledge about diabetes and (7) their perceived information needs. While many of the above were closed questions, some were in the form of a 5-point Likert scale. Those in scale form were: perceived information needs, perceived knowledge on diabetes and perceived known aspects.

Patients were also asked whether they were satisfied with their present knowledge and whether they would still be willing to receive additional information if offered. If patients indicated unwillingness to receive more information, a probe question was used to determine their reasons for their negative response. Lastly, they were asked in what form (verbal, written, combination, video/audiotapes, other) they would like information to be given to them.

10.2.2.3 Part 3: Perceived health status

Part 3 contained questions related to perceived health status. In this section, patients were asked to describe their present health status on a scale of 1 to 10, with 1 being extremely poor and 10 as excellent. They were also asked whether they worry about their diabetes and whether they think that the information they got about their diabetes had helped them deal with their condition. The last two questions were in the form of a 4-point Likert scale (not at all, sometimes, always and most of the time).

The draft of the questionnaire was pre-tested with 5 diabetic patients in the hospital to determine clarity of questions, the kind of responses obtained, the length of time of administration and other aspects related to the interview of patients. The draft was revised prior to the actual interview of survey participants.

10.2.3 Statistical methods

Data from patient interviews were coded, stored and analysed using Statview 4.0. Descriptive statistics were used to determine the demographic characteristics of the survey participants and were also used in the analysis of responses to the questionnaire. Non-

parametric statistical methods were employed in the analysis of relationships between demographic characteristics and the variables such as:

- known aspects of diabetes;
- sources of information;
- information-asking;
- perceived knowledge on diabetes;
- perceived information needs;
- satisfaction with present knowledge;
- willingness for additional information;
- preferred form/s of information;
- usefulness of information on diabetes;
- perceived health status and
- worry about diabetes.

Qualitative responses which were volunteered by patients during the interviews were also recorded for their possible relevance to the questions contained in the questionnaire.

10.3 Results

10.3.1 Survey participants

Permission was obtained from the Acute Care Program Ethics Committee of the Royal Hobart Hospital to conduct the present study at the hospital. Liaison with the clinical pharmacists and ward staff had facilitated the identification of NIDDM patients during a six-week period from September to October, 1996. One hundred and fifteen (115) patients were identified. Patients who either had visitors, were sleeping, were eating, were tired or were out for diagnostic testing or those who were transferred to other wards were also followed up during the period, and some of them were included in the survey. Of those who were qualified for interview, some were not available due to varied reasons: some patients on the list were discharged during a weekend and one patient was placed in isolation and was not

able to be interviewed. Of the 115 identified NIDDM patients, only 50 names were retained after exclusion criteria were applied.

10.3.2 Demographic characteristics

The study participants were made up of 22 males (44%) and 28 females (56%). The survey participants were relatively elderly, the mean age being 71 (s.d. ± 13.0, minimum = 39, maximum = 101). The participants' distribution by age is shown in Figure 10.1.

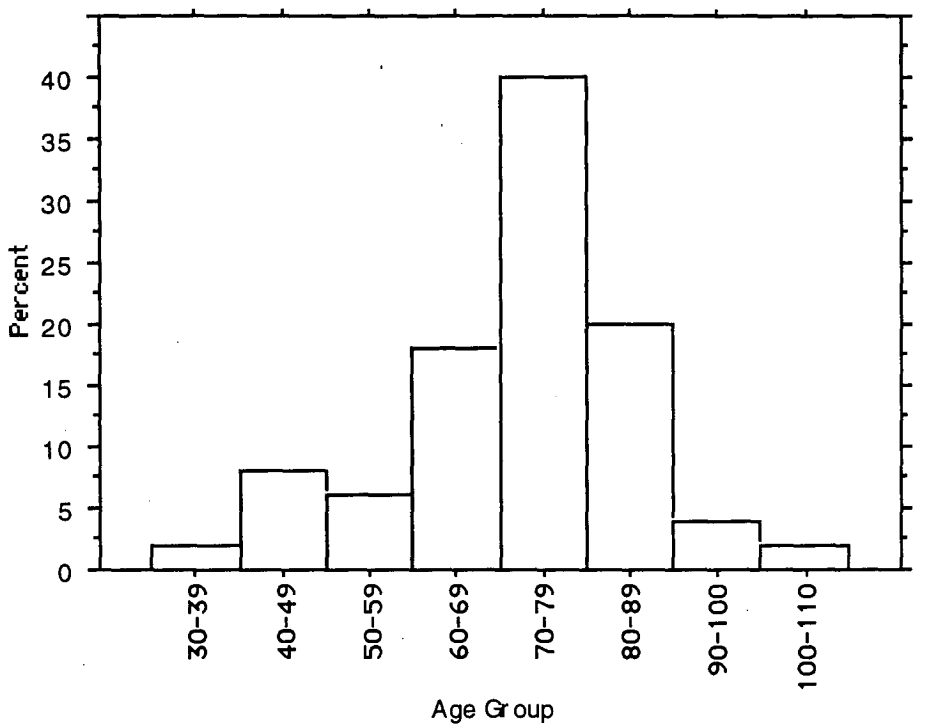


Figure 10.1 Survey participants' distribution by age

Thirty-five percent (35%) of the participants had been diagnosed with diabetes for 1 to 5 years. However, the mean number of years was 8 years (s.d. ± 6.8, minimum = 0.1, maximum = 29). Survey participants' distribution by the number of years of diagnosed diabetes is presented in Figure 10.2.

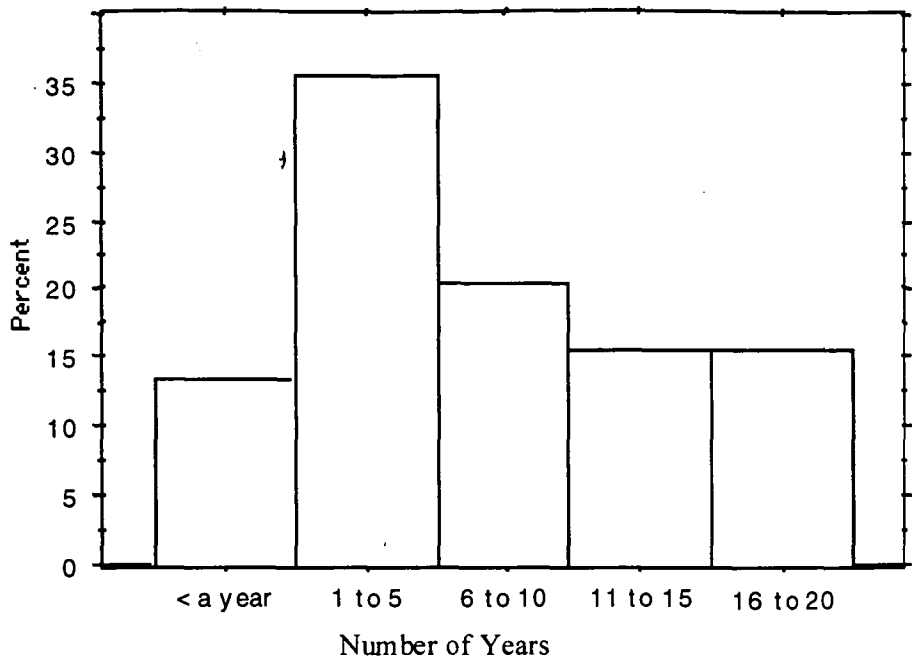


Figure 10.2 Survey participants' distribution by number of years of diagnosed diabetes

Apart from one participant of aboriginal descent, all the others were of Caucasian origin. With regards to area of residence, most of the participants were from Southern Tasmania and only one patient was from Launceston. As for the reason for admission to the hospital, 45% of involved patients were admitted due to cardio-vascular conditions, 10% were because of unstable diabetes and the rest were due to various ailments ranging from respiratory problem to accidents.

10.3.3 Information needs and sources

10.3.3.1 Known aspects of diabetes

Responses were grouped according to (1) nature/symptoms/ complications, (2) diet and food preparation, (3) use of drugs, (4) hypoglycemia, (5) footcare, (6) exercise and (7) blood glucose monitoring. Table 10.1 shows the breakdown of responses in accordance with the above classification.

Table 10.1 Aspects of NIDDM counselling known to survey participants

Aspect of Counselling	Count (%)	N
• nature/symptoms/complications	25 (54)	46
• diet and food preparation	39 (80)	49
• use of drugs	31 (76)	41
• hypoglycemia	16 (38)	42
• footcare	28 (57)	45
• exercise	11 (24)	49
• blood glucose monitoring	34 (71)	48

10.3.3.2 Sources of information

Figure 10.3 shows the different sources of information utilised by survey participants. It is evident that a majority of participants received information from three leading sources: the general practitioner (78%), personal readings/ family members/ friends (76%) and hospital/ community centre (74%).

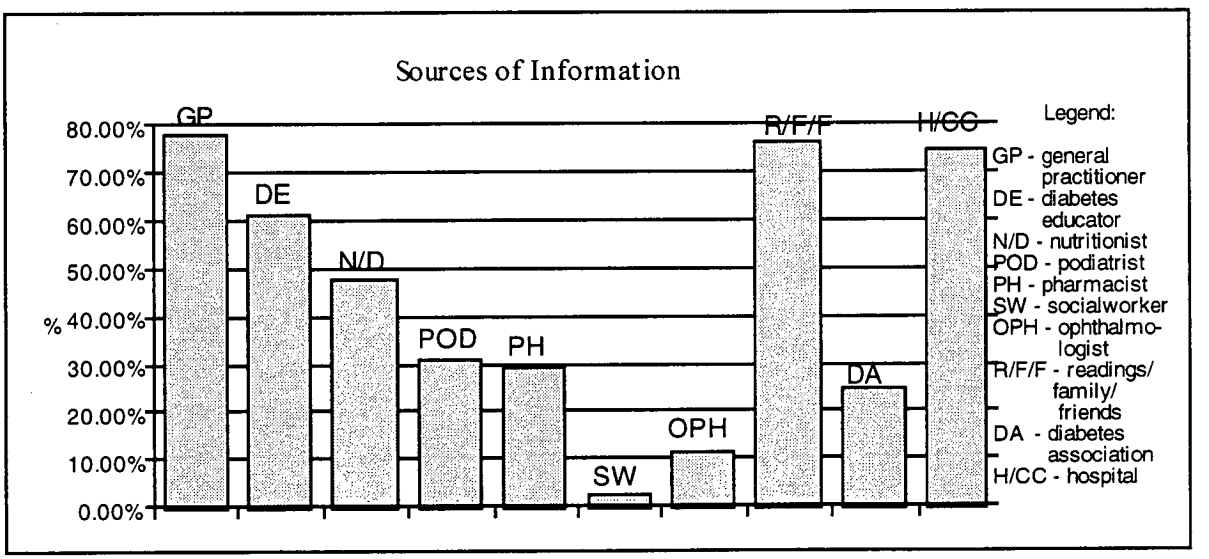


Figure 10.3 Survey participants' sources of information

10.3.3.3 Other aspects about information needs and sources

Responses to other questions in Part 2 are summarised in Table 10.2.

Table 10.2 Survey participants' responses to other Part 2 questions

Aspect	Count (%)	N
• Information-seeking		35
• information given without asking	13 (37)	
• mainly by patient-asking	1 (3)	
• combination	21 (60)	
• Perceived knowledge on diabetes		48
• nothing/least	7 (15)	
• less (1-2 aspects)	15 (31)	
• some (3-4)	18 (38)	
• a lot (>5)	7 (15)	
• uncertain	1 (2)	
• Perceived information needs		50
• none	9 (18)	
• few (1-2 aspects)	10 (20)	
• some (3-4 aspects)	1 (2)	
• a lot (>5 aspects)	4 (8)	
• uncertain	26 (52)	
• Satisfaction with present knowledge		48
• yes	28 (58)	
• no	20 (42)	
• Willingness for additional information		46
• yes	36 (78)	
• no	10 (22)	
• Preferred form of information		42
• verbal	6 (14)	
• written	7 (17)	
• any	29 (69)	
• Usefulness of known information about diabetes		44
• useful	42 (95)	
• not useful	2 (5)	
• Perceived health status		45
• excellent	0	
• very good	6 (13)	
• satisfactory	29 (65)	
• poor	10 (22)	
• extremely poor	0	
• Worry about diabetes		44
• not at all	37 (84)	
• sometimes	2 (5)	
• always	4 (9)	
• most of the time	1 (2)	

10.3.4 Statistical relationships

Participants' responses were tested for any significant inter-variable relationship and also with demographic variables using contingency tables (Chi-square test). Age, gender, years with diagnosed diabetes and area of residence were tested with variables in Part 2. Ethnic origin was not included since there was insufficient basis for comparison. Only significant findings, those with $p \leq 0.05$, are summarised in Table 10.3:

Table 10.3 Significant relationships between socio-demographic characteristics and variables; and relationships among variables in Part 2 using contingency tables

Relationship tested	Chi-square value	d.f.	*p* value
• Years of diagnosed diabetes and			
• number of known aspects of information	31.9	12	<0.002
• number of sources	32.1	12	<0.001
• perceived knowledge	29.3	16	<0.02
• perceived information needs	31.0	16	<0.01
• satisfaction with knowledge	14.1	4	<0.01
• Willingness for new information and			
• perceived information needs	35.1	4	<0.0001
• usefulness of information	8.9	1	<0.003
• satisfaction with knowledge	4.7	1	<0.03
• Perceived knowledge and			
• number of known aspects of information	40.8	12	<0.0001
• number of sources	42.5	12	<0.0001
• Number of known aspects and			
• number of sources	69.5	9	<0.0001

10. 4 Discussion

10.4.1 Survey Participants

In consultation with the members of the expert panel mentioned in Chapter 8, it was decided that participants for the survey be taken from patients at the Royal Hobart Hospital. In comparison with other survey methods, the survey of hospital patients was considered more reliable for the following reasons: (1) hospital records tend to show relative accuracy about a patient's condition, (2) it did not have the bias of newspaper advertisement where only interested and verbally expressive people might participate and (3) the professional setting of the hospital could elicit respect and trust for the interviewer and enhance the relevance of the study to the participants.

One limitation of the study was that the majority of the patients who were involved were from Southern Tasmania. Therefore, results were characteristic of NIDDM patients in Southern Tasmania more than of the other two regions. It is highly possible that the trends of responses vary from those of the Northern region which has a different diabetes information network compared to the Southern region (Chapter 9).

The interviews lasted from 25 to 45 minutes with time allowance for patients who wanted to speak more about the topic. Some patients had immediate family members or carers who also contributed some information during the interview. In some of the interviews, it had been necessary to ask probe questions on the basis of the clarity of responses received. The period spent on an interview was limited by a doctor's rounds, arrival of visitors and increasing tiredness or sleepiness on the part of the patient. Some of the NIDDM patients interviewed were able to clarify their answers by providing additional information about their conditions. Some of these qualitative responses will be included later in the discussion.

10.4.2 Demographic characteristics

The mean age of the 50 participants was 71, which denoted that the participants were mostly elderly. The survey participants were fairly distributed geographically on the basis of their postcodes. However, a sizeable number of NIDDM patients (38%) were from the 7009 and 7010 area codes, Moonah and Glenorchy, respectively. Whether this is indicative of the prevalence of NIDDM cases in those areas is not conclusive. Almost half of the participants had ≤ 5 years of diagnosed diabetes with a majority (35%) in the 1 to 5 years range. Almost one-third of the participants had diagnosed diabetes for 11 to 20 years. A majority of the participants were admitted for cardio-vascular conditions and other ailments other than their diabetes. Only one-tenth of the participants were admitted due to unstable diabetes.

10.4.3 Information needs and resources

10.4.3.1 Known aspects of diabetes

The participants varied in what they knew about diabetes and its management. A majority of them mentioned familiarity with diet requirements and food preparation (80%), the use of drugs (76%), blood glucose monitoring (71%) and footcare (57%). Almost half claimed knowing something about the nature, symptoms and complications of diabetes. It is apparent that fewer of the participants were informed about hypoglycemia (38%) and exercise (24%). No attempt, however, was made in this study to ascertain the quality of their learned information.

10.4.3.2 Sources of information

NIDDM patients tended to vary in their utilisation of various sources of diabetes information. A majority of them obtained information from the general practitioner, personal readings, family members or friends and from hospital or community centres. There were lesser number of participants who had utilised other health professionals such as the nutritionist, podiatrist, pharmacists, ophthalmologist and social worker as sources of

information. This finding had warranted the claims of the nutritionist and the podiatrist in Hobart (Chapter 9) that there were fewer patients who availed themselves of their services. One major reason these health professionals put forward was their specialised services were not covered by Medicare benefits. The NIDDM patients interviewed in this study were actually in a public hospital and probably, there could be an association between their low utilisation of these sources and their financial capability.

Figure 10.3 showed that fewer than 30% utilised the information services of a pharmacist. This value, however, is closer to the findings of Heffernan et al. (1993) about the utilisation of pharmacists as a source of medication information in Tasmania. However, this value is lower than that obtained from the general population survey in Chapter 7 in which 66% of the survey respondents considered the pharmacist a leading source of information. One reason could be age difference: the age range in this study was 39-101 while in the general survey, it was 33-57 years old. In addition, all of the hospital patients interviewed had a diagnosed chronic condition requiring some contact with a physician and other health professionals. Lastly, the pattern of utilisation of the pharmacist as a source of information may differ with the elderly. It was found recently in the U.K. that elderly people expressed preference to discuss health issues with their general practitioner rather than the pharmacist. Most of the elderly people had not wished to avail themselves of the pharmacist's services as a source of information about health and drug matters (Jones et al. 1997).

10.4.3.3 Other aspects of information needs and sources

Information-seeking

There were differences in how patients obtained information from various sources. A majority of the participants obtained information through a combination of their asking and the voluntary provision by their sources of information (60%). In comparison, 37% of the participants received information without asking while 3% merely asked questions to obtain information. It could be deduced from this result that interactive communication has been

used by a majority of participants in information-seeking more than simply providing or receiving health information. One enthusiastic participant described how he arrived at his present knowledge: "I learned more about diabetes by myself...ask questions to different people and then I put the pieces together...". A wife of a diabetic also remarked on information-asking: "A squeaking wheel gets the oil, so we squeak".

Perception of knowledge about diabetes

Participants' perception of their knowledge showed that a majority knew about 'less' and 'some' aspects (1 to 4 aspect) of diabetes. As provided in Table 10.3, perception of knowledge was found to significantly relate to the number of years a person had been diagnosed with diabetes, number of known aspects and the number of sources a person had. Newly-diagnosed NIDDM patients (5 years or less) tended to perceive less knowledge when compared with patients with diabetes diagnosed for 11 to 20 years. A patient, well in his 80s, said that "I don't think there is much to learn about, having had diabetes for twenty years". Those who had diabetes for a shorter period were also more likely to have less sources of information than those who had known their condition for a longer period of time.

Those who perceived that they had known 'enough' information consisted mostly of those participants who had learned 'a lot' (> 5 aspects of information) while many of those who perceived that they knew 'less' were those who have 'some' (3 to 4 aspects of information) known aspects. Perceived knowledge appeared to be highly related to the number of sources of information. Those participants who perceived greater knowledge of diabetes were mostly those who had more sources of information available to them.

Perceived information needs

Perceived information needs were significantly related to number of years a person had been diagnosed with diabetes. It also related significantly to participants' willingness for additional information. Contingency table analysis showed that those who were newly-

diagnosed had greater information needs than those patients who had diabetes diagnosed for a longer period of time. The latter patients expressed lesser needs or 'uncertainty' about their information needs. So far as willingness to receive more information was concerned, those who did not perceive any need for information seemed to be reluctant in receiving additional information about their condition. Reasons why they refused additional information were given by some patients: "No, I know enough", "It's not part of my life [referring to diabetes]...it does not bother me at all", "I give time to reading available references" and "The doctor has given me all things I wanted to know". Two elderly patients said that they had phone numbers to contact in case they wanted help. On the other hand, many of those who were 'uncertain' about their needs indicated a greater 'willingness' to have more information about diabetes.

Satisfaction with present knowledge

More than half of the participants were satisfied with their present knowledge about diabetes and its management. Many of those who had diabetes diagnosed for a long time expressed satisfaction with their knowledge greater than those who were newly-diagnosed. It was also found that increased satisfaction with knowledge tended to relate significantly with increased willingness to receive more information about diabetes. A significant number of those who indicated satisfaction with their knowledge were less willing to learn new information and those who signified dissatisfaction with their knowledge were more willing to receive additional information on diabetes.

Preferred form of information

A large number of participants (69%) did not prefer a specific form of information they would like to receive. About 17% preferred written information whereas 14% would like to receive verbal information. There seems to be prevailing willingness among participants to receive information in any form rather than verbal or written only. One patient mentioned that "any [verbal or written] will do really because how they work will depend on me".

However, a lady who preferred written more than verbal information explained that "verbal is easily forgotten but reading is better because the information can be re-read again".

Usefulness of information

Most of the NIDDM patients interviewed were convinced of the usefulness of information they had received or will be receiving and its contribution to the management of their condition regardless of age, gender, years of diagnosed diabetes and area of residence. Some participants tried to explain their responses. One person said of the usefulness of diabetes information, "it helps in making choices or decisions" and another added that "yes, it helps me to cope". One was careful to generalise, he said "Yes, if it comes from people who know what they are talking about". On the contrary, there was one who said that "I don't know enough to be able to see its usefulness. I just take medicines prescribed".

Willingness for new information related significantly with perceived usefulness of learned information. Comparison of observed with expected frequencies showed that a significant number of those who declined to receive new information were those who indicated that information learned previously was not useful. Participants who perceived that their previous learning was useful were also willing to receive additional information.

Perceived health status and worry about diabetes

Despite their hospitalisation, a majority of the participants considered their health status as satisfactory. Fewer perceived that they had poor health or that their health was very good. Most of the participants said that they did not worry about their diabetes. Three of the participants tried to explain this in individualised context. A patient said that "we do not worry but we're concerned". The other mentioned that "I don't worry because I'm already 80 years old and had a few years to live". For another, "I think that the more worry one has, the sicker one will become". Even the term 'always worried' did mean different things to the participants. One person quipped "Yes, I'm always worried...worried to do the right thing".

Relationship of health status and worry with positive care action, such as health information-seeking, as found in another study was not supported by this finding (Van der Kar et al. 1992).

10.5 Conclusion

This study was able to explore several aspects of information needs and resources among NIDDM patients in Southern Tasmania through the procurement of quantitative and qualitative data in an interview format. The interview format seemed to be suitable to the hospitalised conditions of the patients and, therefore, was a proper choice.

A majority of the participants were found to be more informed about the diet requirements, the use of drugs, blood glucose monitoring and footcare. The quality of the knowledge obtained, however, was not determined and could be explored in future studies. Fewer of the patients interviewed appeared to be knowledgeable about hypoglycemia and exercise.

Participants were found to avail themselves more of diabetes information from general practitioners, lay sources (readings, family members or friends) and from hospital or community centres. Independent health professionals such as the diabetes educator, nutritionist, podiatrist and pharmacist were less utilised as sources of information. Many of the participants had engaged in interactive communication with their sources in procuring information about their diabetes.

Based on contingency table analysis, there was a significant pattern of relationship among variables which could possibly interpret the study participants' positive information-seeking behaviour. This relationship is illustrated in Figure 10.4. In that illustration, the number of years is the independent variable which is significantly related to five dependent variables (number of known aspects, number of sources, perceived knowledge, perceived information needs and satisfaction with knowledge). Both number of known aspects and number of sources of information were determinants of perceived knowledge. Perceived knowledge,

perceived information needs and satisfaction with knowledge all influence NIDDM patients' willingness to receive more information about diabetes and its management.

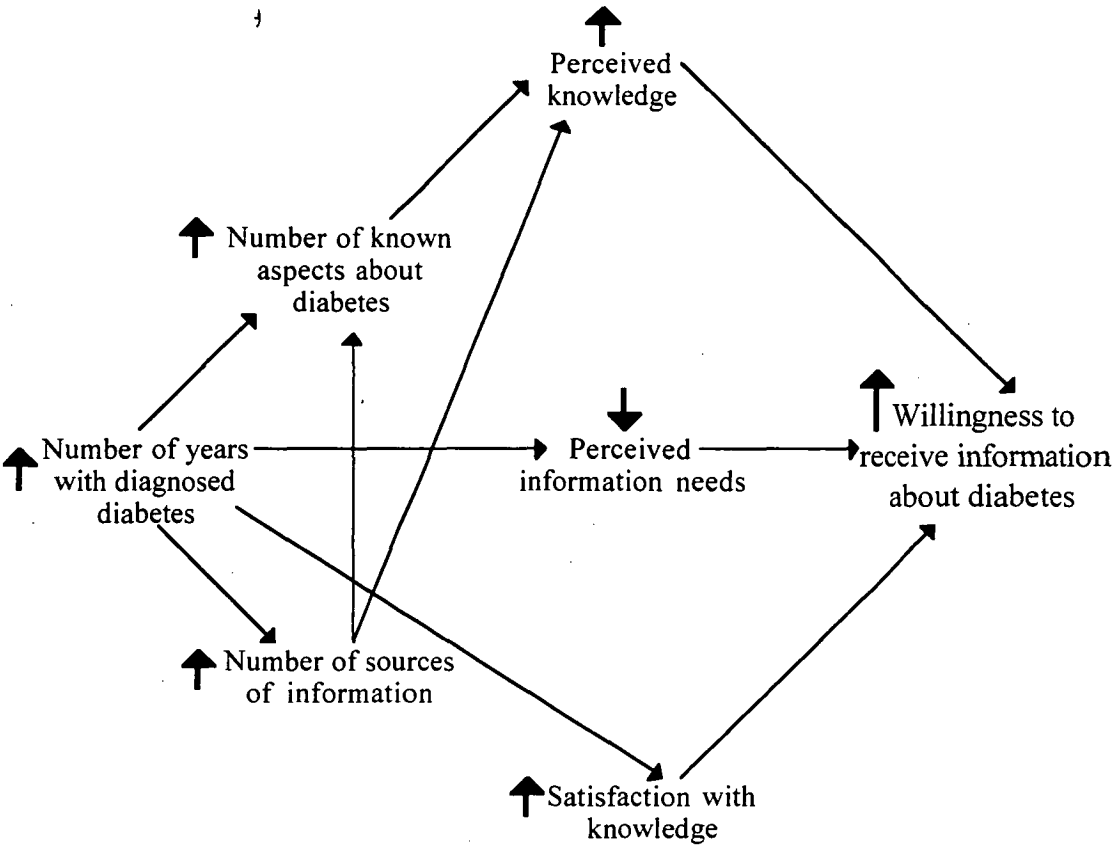


Figure 10. 4 Pattern of relationships among study variables which contributes to positive information-seeking behaviour among NIDDM patients'

Figure 10.4 also illustrates the importance of having many sources of information both in increasing the number of known aspects of diabetes and its management and a patient's perception of his/her own knowledge which could enhance their willingness to receive additional health information.

This study has several implications for community pharmacy practice and training. Firstly, recognition of community pharmacist's role as a source of information about diabetes and its management by the NIDDM patient community in Southern Tasmania needs to be improved. Secondly, pharmacists' counselling should contribute information in areas in which patient

needs exist. Thirdly, it is also helpful to know NIDDM patients' level of knowledge in diabetes prior to counselling so that any additional information supplied by a pharmacist will be relevant.

CHAPTER 11

Study 6

NIDDM Patient Counselling Training Program for Community Pharmacists

11.1 Objectives

- to develop a comprehensive training program for community pharmacists in NIDDM patient counselling which is expected to:
    - address identified pharmacists' training needs and factors affecting their provision of counselling;
    - be responsive to NIDDM patients' information needs and
    - fill in identified gaps in the provision of NIDDM patient counselling by key health professionals in the community.

11.2 Methods

11.2.1 System for developing continuing professional education (CPE) programs

11.2.1.1 Key elements

The CPE system introduced in Chapter 5 was used in planning the components of the training program. In essence, this system guided the inclusion of the following elements in the design of the NIDDM patient counselling training program:

- adult learning principles;
- training needs assessment and contextual analysis;
- appropriate curriculum development approach and
- workplace performance evaluation.

The usefulness of this system in developing this specific training program was already mentioned in Chapter 5. The NIDDM patient counselling training program developed, guided by the CPE system, had the following main features:

- it integrated knowledge, skills and attitudinal components based on the needs of the pharmacists and other contextual factors affecting NIDDM patient counselling;
- objectives of learning and performance criteria were based on the findings from the training needs assessment and contextual analysis;
- it utilised a multi-disciplinary approach and is comprehensive in content;
- it offered a variety of modes and settings as well as methods of evaluation;
- the design and methods of learning were within the limits of resources available to providers and learners;
- emphasis on program and outcomes evaluation;
- selection and development of appropriate evaluation and materials applicable to workplace evaluation and
- overall feedback in the form of recommendations emanating from the evaluation of the program and its outcomes.

11.2.1.2 Program Plan

Learning strategy

The findings from Studies 1-5 (Chapters 6 to 10) were used to contextualise the training program. These findings also helped design the curriculum content and other components of learning. Table 11.1 presents the contributions of these studies to the development of the training program curriculum.

Table 11.1 Overall implications of previous studies to training program curriculum

Study	Implications on Curriculum
Study 1: Factors affecting Tasmanian pharmacists' patient counselling	• knowledge and skills which will help boost pharmacist's confidence in their NIDDM patient counselling • time factor in counselling
Study 2: Medication information-seeking behaviour among Tasmanians	• pharmacist's initiation of counselling
Study 3: NIDDM patient counselling of Tasmanian community pharmacists	• deficit in NIDDM patient counselling content • prior training in diabetes counselling • preferred topics for the training program
Study 4: Information and resource needs of NIDDM patients	• aspects of diabetes and its management which patients need • comprehensive knowledge of diabetes • understanding of the overall health needs of NIDDM patients
Study 5: Status of NIDDM patient counselling of key health professionals	• gaps in the provision of NIDDM counselling by key health professionals (Appendix 4.1)

A. Objectives of the training program

At the end of the learning activity, it was expected that trained pharmacists would be able to:

- know and understand the NIDDM diagnosis and pathophysiology, drug therapy and various aspects of diabetes management and
- demonstrate improved skill as a helper-communicator.

B. Content of learning

The training program consisted of two main components:

- Diabetes Knowledge
- Applied Communication Skills

The Diabetes Knowledge component consisted of sessions imparting important factual information about diabetes and its management from selected health professionals comprising the community diabetes health care team. These individuals had the expertise and experience in the counselling of diabetic patients, both in the giving and receiving of information. This component was divided into:

- Pathophysiology and diagnosis of NIDDM
- Pharmacotherapy
- Various health care interventions for diabetic patients

The Applied Communication Skills component was composed of sessions focused on the acquisition of basic communication skills that were necessary in communicating with patients. Using the micro-counselling concept, the following micro-skills were included in the training:

- Attending and active listening skills
- Empathic responding skills
- Interviewing skills
- Influencing skills

An illustration of the relationship between the health professionals' involvement and the two components of the program is shown in Figure 11.2.

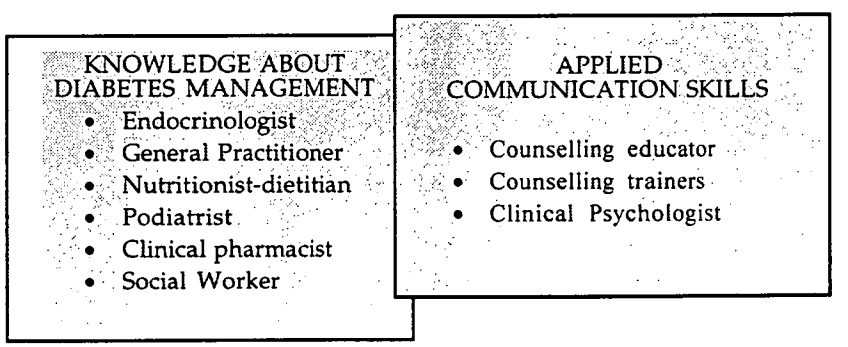


Figure 11.2 Complementary nature of the training team and the components of the program

B. Sequence of Activities

In consideration of the availability of participants, resource persons and facilities, the training program was scheduled for three alternate Sundays during the period March to April 1997. The following was the timetable of activities:

TIMETABLE OF ACTIVITIES

DAY 1 March 23, 1997

Morning Session
Tasmanian School of Pharmacy, Chemistry Building

8:45 - 9:00	**Registration of Participants**
9:00 - 9:30	**Introduction to the Course** **Preliminary Assessment**
9:30 - 11:00	**Lecture: The Pathophysiology and Diagnosis of NIDDM** *Dr Tim Greenaway, Endocrinologist, Royal Hobart Hospital*
11:00 - 11:30	**Morning Tea**
11:30 - 1:00	**Lecture: Pharmacotherapy of NIDDM** *Dr Gregory Peterson, Clinical Pharmacy Lecturer, Tasmanian School of Pharmacy*
1:00 - 2:00	**Lunch Break (BYO)**

Afternoon Session
Applied Communication Skills (ACS) Workshop 1
School of Education, Hytten Hall

2:00 - 2:30	**ACS Workshop Orientation** *Dr Carey Denholm, Associate Professor and Educator, School of Education*
Counselling	
2:30 - 5:30	**Instructions on the format and activities of ACS workshop (includes afternoon tea)** *Ms Ann Marie Lancaster and Jan Clippingdale, Trainers*

DAY 2 April 6, 1997

Morning Session
Various Health Care Interventions for NIDDM Patients
Tasmanian School of Pharmacy, Chemistry Building

9:00 - 10:00	**Overall Diabetes Management** *Dr Nicholas Cooling, Senior Medical Officer, Clarence Community Health Centre*
10:00 - 11:00	**Diabetic Nutrition** *Ms Julie Williams, Consultant Dietitian*
11:00 - 11:30	**Morning Tea**
11:30 - 12:30	**Vascular/Neurological Assessment** *Ms Maree Graham, Podiatrist, Hobart Podiatry Clinic*
12:30 - 1:30	**Lunch Break**

Afternoon Session
Applied Communication Skills (ACS) Workshop 2
School of Education, Hytten Hall

1:30 - 2:30	**Effective and Ineffective Communication Skills in Pharmacy** *Ms Ann Marie Lancaster and Jan Clippingdale, Trainers*
2:30 - 5:30	**Interactive Communication Skills Activities (includes afternoon tea)** **Videotaping Session** **Debriefing Session**

DAY 3 April 20, 1997

Morning Session
Various Health Care Interventions for NIDDM Patients
Tasmanian School of Pharmacy, Chemistry Building

9:00 - 10:00	**Psychology of Diabetic Patients** *Mrs Pip Conley, Social Worker, Launceston Diabetes Centre*
10:00 - 11:00	**Proper Use of Blood Glucose Meters and Insulin Syringes** *Mr John Okey, Boehringer-Mannheim Territory Manager*
11:00 - 11:30	**Morning Tea**
11:30 - 12:30	**NIDDM Patient Counselling Kit** *Dr Roger Rumble, Clinical Pharmacy Lecturer and Yolanda Robles, PhD Student*
12:30 - 1:30	**Lunch Break**

Afternoon Session
Applied Communication Skills (ACS) Workshop 3
School of Education, Hytten Hall

1:30 - 5:30	**Interactive Communication Skills Activities (includes afternoon tea)** **Videotaping Session** **Debriefing Session** *Ms Ann Marie Lancaster and Jan Clippingdale, Trainers*

C. Learning methods and materials

The training program employed a variety of learning methods. The use of multiple, innovative, problem-based, active learning methods was reported to create successful educational programs (Fisher 1994; Koda-Kimble and Batz 1994).

The Diabetes Knowledge sessions were mainly group learning with the use of lectures, audio-visual aids, and written hand-outs. Demonstration and interactive discussion also supported the lectures. Each lecture was provided with a 10-minute period for participants to ask questions to clarify areas or aspects taken up in the lecture.

The Applied Communication Skills sessions utilised a combination of methods: lecture, video demonstration, communication skills activities such as dyad counselling exercises, relaxation exercises and micro-counselling techniques. The video demonstration viewed by the participants was part of the "Effective Communication in Pharmacy Practice Kit developed by the University of South Australia" (Gilbert and Quintrell 1996).

The micro-counselling training method was chosen as the main learning method for the ACS sessions. It is one of the three leading methods for training professional counsellors. The following narrative highlights the advantages of this method over other learning methods.

> There are three leading methods in educating counsellors: Kagan's Interpersonal Process Recall (IPR), Carkhuff's Human Resource Training/Human Resource Development (HRT/HRD) and Ivey's Micro-Counselling (MC) (Baker et al. 1990). Each can be differentiated on the basis of their procedure and kinds of counselling dimensions in the training of counsellors.
>
> IPR tends to focus more on the trainees' feelings and thoughts about their performance in the counselling interview. As a result, trainees are asked to review their counselling interviews and under supervision are encouraged to develop insights about their behaviour and feelings in the counselling session (Daniels 1994).
>
> HRT/HRD is a more conceptual-based approach focusing not much on basic communication skills but on the ability of trainees to discriminate and

communicate the facilitative core conditions (eg. empathy, genuineness, immediacy) similar to Carl Rogers. The training makes use of objective measures of the facilitative conditions in training of varying lengths (1 to 100 hours) and guides trainees through programmed instructions using behavioural modification techniques (Baker 1990).

MC is a systematic training program based on the principles of social learning theory in which the trainees learn the basic microskills of communication on a one by one basis. This program makes use of video feedback, role-play, modelling and supportive supervision. The basic microskills of communication are seen as foundations of therapeutic communication (Ivey and Authier 1978).

Three extensive comparative reviews of these three methods were performed by Daniels (1994), Baker et al. (1990) and Baker and Daniels (1989) where narrative and meta-analytic approaches were used. Facets of the reviews which are considered relevant are that (1) MC appears to be more effective than alternative major training programs, (2) in terms of meta-analytic method regarding the mean effect size, the increasing order is IPR, MC and HRD/HDT and (3) that MC has more evidence of effectiveness in teaching lower-order skills (facilitative conditions).

Because of these findings, more information was sought regarding other qualities of the MC training method. Daniels (1994) summarised these attributes as: (1) it is also found to be effective in teaching higher-order skills of helping, (2) it is effective in teaching skills outside of counselling field, specifically physical therapy assessment and social skills, (3) it has been an effective training method with a variety of populations including nurses, physicians, teachers, physical therapists as well as various age groups and lastly, (4) there is more evidence that skills learned through MC do translate to the real world of counselling and skill maintenance is related to follow-up reinforcement.

Table 11.2 presents the learning methods used in the training program, both for the morning and afternoon sessions.

Table 11.2 Learning methods and materials used in the training program

Training Session	Learning Methods	Materials
Pathophysiology and Diagnosis of NIDDM	lecture, question and answer	slide projector
Pharmacotherapy	lecture, question and answer	overhead projector, white board, lecture handout
Various Health Care Interventions	lecture, question and answer, hands-on, demonstration, videotape viewing	slide projector, overhead projector, "Choosing the Right Meter for You" videotape, insulin syringes, product information guide, various footcare diagnostic equipment, nutrition pamphlets, list of nutrition information sources
Applied Communication Skills	lecture-discussion, relaxation exercises, videotape viewing, counselling vignettes, dyad counselling exercises, written exercises, micro-counselling sessions and video de-briefing	overhead projector, television, video recorder, "Effective communication in pharmacy practice" videotape, one-way mirror video rooms, cameras, handouts

Each participant received the following set of materials in addition to materials used during the sessions:

- NIDDM Training Information which contained a letter of introduction, training information, schedule of activities and reports on training needs assessment and contextual analysis
- Handouts from both morning and afternoon sessions resource speakers and trainers
- NIDDM Patient Counselling Kit containing Research Protocol, Information Needs Checklist, Pharmacist's Intervention Flowchart, NIDDM Patient Diary, Patient Consent Forms and Referral Slips

Participants were requested to bring their own videotapes for the afternoon sessions. For those who missed any of the morning sessions, videotapes and handouts were also provided.

Distribution strategy

In the survey conducted among community pharmacists regarding NIDDM patient counselling (Chapter 8), an information leaflet with a reply form was included. In the leaflet, pharmacists were informed about a future training program in NIDDM patient counselling. If they were interested in receiving more information about it, they were instructed to provide personal details such as name, address and contact number.

A total of 42 reply forms were returned. The respondents were evenly distributed among the three regions of the State. After four months, respondents were sent another set of documents: an introductory letter, a copy of the timetable of activities (without the dates but indicating the location), a reply slip which contained a request for signed consent and a choice of training schedules and a reply paid envelope.

Only 18 reply forms were sent back. Non-responders were contacted again and three pharmacists signified renewed interest to join the training program and were also sent a similar set of documents to the other 18 potential participants. All the 21 reply forms were collected. Respondents by geographical distribution: 17 from southern region, 2 from the North and 2 from the Northwest. A majority preferred one day and half-day seminars. However, balancing the content of the program, the availability of the resource speakers and the video rooms for the afternoon sessions, a decision was made to conduct it on three Sundays in March and April, 1997. Each pharmacist was sent another letter stating the final dates of the training and was contacted by phone to confirm their attendance. There were 4 of the 21 pharmacists who were not amenable to the final dates and one preferring a venue in the North decided not to join. Of the 16 left, two were out of Tasmania at the time of contact. Of the remaining 14, three would not be able to attend the first day and one would arrive late from a trip to the mainland. Eleven participants were expected to complete all three alternate Sundays. A provision was made for those who could not attend the first day: morning sessions were taped and handouts would be provided for both the morning and

afternoon sessions. Except for two pharmacists from the North, the majority of the participants were from Southern Tasmania.

Personnel strategy

The composition of the 'diabetes knowledge' training team was based on three studies, Studies 3-5 (Chapters 8-10). They were: endocrinologist, general practitioner, diabetes educator, nutritionist, podiatrist, pharmacist and social worker. A search for potential resource speakers was conducted simultaneously with the study on NIDDM patient counselling by key health professionals (Chapter 9). Subjective criteria used, according to decreasing degree of importance, were: (1) expertise and knowledge in NIDDM management, (2) extent of experience and degree of involvement in patient counselling and (3) ability to impart ideas in a logical and concise manner. A letter of invitation and introduction to the training program and timetable of activities (without the dates and names of resource speakers) was sent to each of the possible resource persons. Reply paid envelopes were also included for them to send back their acceptance or non-acceptance of the invitation. All, except the diabetes educator, positively accepted the invitation. Possible resource persons were contacted by phone and were informed of the nature of the training program and the three weekend schedule. All were available on the final dates specified. Another set of documents were sent: a letter stating their topic and the date of lecture, a revised timetable of activities and a campus map. They were also asked to send in lecture materials which could be photocopied and distributed as handouts.

An attempt was made to contact another diabetes educator in Hobart but the person was not available on the set dates. The diabetes educator suggested the name of a representative of a blood glucose monitoring device supplier to be a potential resource person regarding the use of these devices and insulin syringes. A contact was made and the invitation was accepted by the person. Materials similar to those sent to other resource persons were also provided for him.

A small remuneration was allotted for each resource person except one who was a lecturer in the School of Pharmacy (Appendix 7).

As for the 'applied counselling' team, two counselling trainers, both taking counselling education at the time of the implementation of the training, were recommended and hired to handle the applied communication skills afternoon sessions. They were chosen by the counselling education consultant according to their qualifications. They were met by the researcher on two separate occasions, prior to the implementation of the training program, to discuss the purpose of the training, the sequence of activities, the learning methods and materials and other matters pertaining to materials and facility preparation at the School of Education. During the first meeting, they were also given a written format for the content of the workshop sessions. In the next meeting, a discussion of their input and comments about the format and implementation of the workshop was held. The format was revised based on their suggestions, limitation of facilities and available materials.

Organisational strategy

General research guidance, assistance regarding videotaping of morning sessions and preparation of venues, was provided by the main supervisor. A counselling education consultant and a psychology consultant were helpful in the planning, implementation of, and preparation of educational evaluation materials for the applied communication skills sessions. Consultation was also made with a researcher from the University of South Australia and an officer of the International Diabetes Institute, both of whom provided useful diabetes patient assessment forms which were utilised in the preparation of the NIDDM Patient Diary, a component of NIDDM Patient Counselling Kit used as an evaluation tool for the workplace application of learning (Chapter 12). Most of the responsibilities regarding the recruitment and follow-up of participants, contact with possible speakers and participants, curriculum development, preparation and reproduction of written materials, written communications, registration of participants and distribution of handouts were handled by the researcher.

Financial strategy

The main sponsor for the training program was Merck, Sharp and Dohme who donated $8,000.00 for the costs associated with the training program. The Tasmanian School of Pharmacy also offered support in terms of personnel, venues, materials and equipment for the three-day training. The budget is provided in Appendix 7.

11.3 Program Implementation

11.3.1 Training Participants

Of the 14 pharmacists who registered, two persons were not able to come to any session, two attended for one day only (second day and last day, respectively) and 10 pharmacists completed the three-day training program. Only those who were able to attend two days of training and who had received materials and videotape for the day of their absence were considered to have completed the training program. The demographic characteristics of the participants are as follows (Table 11.3):

Table 11.3 Demographic characteristics of participants

Characteristic	Count	Percent (%)
Age		
30-40	1	10
41-50	6	60
51-60	3	30
Gender		
Male	4	40
Female	6	60
Job position		
Owner/ manager	5	50
Pharmacist	1	10
Locum	3	30
Government employed community pharmacist	1	10
Average hours worked/ week		
21-30	1	11
31-40	3	33
41 and above	5	56

The participants were given a personal information questionnaire (Appendix 1.6) to determine personal details such as those provided in Table 11.3. In the questionnaire, participants were also asked about their exposure to specific training programs and various learning methods. The summary of their responses is provided in Table 11.4.

Table 11.4 Exposure of participants to specific training programs and learning methods

	Yes (%)	No (%)
• Participation in previous diabetes training program	2 (20)	8 (80)
• Participation in previous patient counselling training program	4 (40)	6 (60)
• Exposure to learning method		
• Lecture	10 (100)	-
• Demonstration	6 (60)	4 (40)
• Workshop	10 (100)	-
• Learning modules	5 (50)	5 (50)
• Written handouts	10 (100)	-
• Role-playing	3 (30)	7 (70)
• Written case study	6 (60)	4 (40)
• Micro-skill videotaping	-	10 (100)
• Videotaped scenario	1 (10)	9 (90)
• Audio-taped lecture	4 (40)	6 (60)
• Other		
readings	1 (10)	-
videotapes	1 (10)	9 (90)
watch a role-play	1 (10)	9 (90)

11.3.2 Activities

11.3.2.1 Morning sessions

The program was implemented according to plan although with some delays with first sessions. During the first day, a diabetes knowledge pre-test (DKT) was given to the participants before the start of any lecture. Lectures were conducted by the respective

speakers, with the use of audio-visual aids and other materials given in Table 11.2. The format of each lecture varied with each lecturer. The first day lectures were intended to increase pharmacists' knowledge base of diabetes and its drug therapy. The succeeding lectures were given to enhance pharmacists' knowledge about the various diabetes care interventions provided by other health professionals, with emphasis on 'what to tell the patient' aspects. The demonstration on the use of different blood glucose monitoring devices and insulin syringes was for the purpose of developing familiarity with the use of those devices. The videotape about the latter topic was shown during the lunch break as there was limited time in the session. During the question time, several questions were asked by the participants and notes were also taken. The atmosphere was congenial and there was an observed rapport between the resource persons and the participants.

During Day 3, the researcher introduced the NIDDM Patient Counselling Kit to the participants. The purpose of the kit, which was to determine the usefulness of the training program to their practice, was explained to the pharmacists. The contents of the kit were: (1) research protocol, (2) counselling intervention workflow, (3) NIDDM information checklist, (4) NIDDM patient diary and (5) referral slip (Appendices 8.5 – 8.7, 9.1 and 9.2). The use of each counselling device was explained and demonstrated. The pharmacists were encouraged to make use of these devices and possibly recruit some NIDDM patients in their pharmacy area for counselling. Instructions on the use of the kit were provided in the research protocol and counselling intervention workflow.

11.3.2.2 Afternoon Sessions

Details of the activities for the three-day applied communication workshops are provided in Table 11.5.

Table 11.5 Applied communication skills workshop activities

Day	Activities
Day 1 Step 1 Creating a learning environment (3 hours)	*Activity 1: Individualised recognition* • Each participant, including the trainers, was requested to introduce him/herself and share some personal information with the group • Relaxation exercise *Activity 2: Purpose and methods of the workshop* • a lecture with emphasis on the objectives of, and methods used in the workshop, the application of communication skills to pharmacy *Activity 3: Effective and ineffective communication* • Participants were divided by twos (dyads) and were asked to choose any of the four scenarios written on the white board and to take turns acting out effective and ineffective communication *Assignment*: Participants were asked to take note of specific situations in their respective pharmacies that require effective communication skills. These situations will be used in the videotaping session for next meeting.
Day 2 Step 2 Training Part I (4 hours)	Pre-tests for Communication Knowledge Test (CKT) and Effective Communication Skills (ECS) were given to the participants *Activity 4: What effective communication is (Part I)* • A lecture-discussion and written exercise on the basic aspects of effective communication: attending and active listening skills, empathic responding skills • View "Effective Communication in Pharmacy Practice" video particularly sections on receiving and sending information *Activity 5: Videotaping session 1* • Participants were divided into dyads and triads in which they alternately role-played as pharmacist or patient and were videotaped. They were instructed to base their scenario on their previous assignment during the first day. *Activity 6: Debriefing of videotapes* • Videotapes from Activity 5 were viewed and participants were asked to comment on their performances on the basis of Activity 4. The trainers also provided helpful comments during the debriefing.
Day 3 Step 3 Training Part II (4 hours)	*Activity 7: What effective communication is (Part II)* • A lecture-discussion on the basic aspects of effective communication: interviewing and influencing skills • View "Effective Communication in Pharmacy Practice" video particularly on eliciting information and effective negotiation *Activity 8: Videotaping session 2* • Previous pairs were each asked to perform a NIDDM-specific counselling in which they alternately played the role of a pharmacist or a patient. Scenarios were designed by participants themselves. *Activity 9: Debriefing of videotapes* • Videotapes from Activity 8 were viewed and participants were asked to comment on their performances or skills on the basis of previous Activities *Final Exercise and Distribution of Certificates of Attendance*

Only the pre-tests of educational outcomes evaluation were measured during the implementation of the training program. All the other evaluation methods were administered at designated dates during the 6-month training assessment period. Evaluation details will be taken up in the next chapter.

11.4 Discussion

11.4.1 Development of the training curriculum

The training program developed using the CPE system was contextual in nature, having to narrow the content of the curriculum to the specific counselling needs of NIDDM patients, training needs of pharmacists and gaps in the counselling of patients by other health professionals in Tasmania. The CPE system had also provided guidance in the learning process through its advocacy of various learning methods, use of a curriculum approach and the inclusion of the workplace evaluation as part of the program. While there was success in making the program relevant to the key players in NIDDM care and management, its effectiveness could only be demonstrated through the results of the program and outcomes evaluation taken up in the next chapter.

11.4.2 Training participants

There were only ten pharmacists who were able to undergo the training program, all of whom were from the Southern region of the state. The limited number of responses from the original 42 pharmacists was related to (1) the distance to the training venues, (2) time involved for the whole training (8 hours per day for three Sundays) and (3) dates of the training which conflicted with other previous appointments.

Demographic characteristics showed that there was an almost even representation between the genders. Many of the participants were in the 41-50 age bracket, half were owners/managers and more than half were working ≥ 40 hours per week. One of the participants was a government community pharmacist whose role differs entirely from the

rest of the participants. She coordinates and implements community-based projects under the Department of Human Services and Health.

Eighty percent of the pharmacists did not have previous training in diabetes care and management. Sixty-percent were able to participate in patient counselling such as the 2-minute counselling program of the Pharmaceutical Society of Australia. As for the exposure to learning methods, all of them were exposed to lectures, written handouts and workshops. In comparison, none or very few of the pharmacists were familiar with videotaped scenario (10%) and micro-skill videotaping. Some of the participants were exposed to demonstrations (60%), written case studies (60%), learning modules (50%), audio-taped lectures (40%) and role-playing (30%). One listed lecture videotapes as another method of learning.

11.4.2 Activities

Except for slight delays in the start of some sessions, the activities were carried out smoothly with the morning sessions. There were several technical problems encountered in the afternoon sessions, though. Delay was caused by technical problems and also by the underestimation of the time allotted for activities before and after the videotaping sessions. It was realised that a longer period of time was necessary to carry out all the intended activities for the afternoon sessions.

11.5 Conclusion

This study was successful in its objective of developing a training program that (1) addresses contextual needs and concerns of NIDDM patients, pharmacists and other key health professionals involved in the management of NIDDM and (2) is multidisciplinary in nature. The incorporation of knowledge and skill components is expected to address both the knowledge and counselling skills needs of community pharmacists and is complementary in enhancing pharmacist's effectiveness in the provision of counselling.

There were some areas which have to be improved for future implementation of a similar training program. One is time management, that is, being able to accomplish the tasks within the most suitable period of time and the other is, the technical requirements involved in the use of micro-counselling techniques in the training of pharmacists. The preparation for and anticipation of these two concerns, though not of immense importance, may be helpful in maximising the benefits of the training program.

CHAPTER 12

Study 7

Program and Outcomes Evaluation

12.1 Objectives

- to determine pharmacists' degree of satisfaction with the various aspects of the training program
- to determine the outcomes of the educational intervention in terms of
    - increase in knowledge and skills of the participants and
    - positive changes in counselling performance in the workplace.

12.2 Methods

12.2.1 Program (process) evaluation

An overall training program evaluation form (Appendix 1.7) was distributed by post to the 10 participants sixty days after the training program. The questionnaire, composed of quantitative and qualitative questions, covered several aspects of the program such as:

- *General* evaluation was about participants' perception of personal learning in terms of the (1) set learning objectives, (2) their overall reaction to the program, (3) their view of whether the program had met their professional needs and (4) their opinion of whether the training format is applicable to other chronic illnesses;
- *Resource persons* evaluation was about pharmacists' ratings of resource persons in the morning and afternoon sessions in terms of (1) knowledge of the subject matter, (2) organisation and preparation, (3) style and delivery, (4) responsiveness to participants and (5) creation of appropriate learning environment;
- *Method of presentation* evaluation concerned participants' opinion regarding (1) the number of resource persons involved, (2) the balance of various learning methods and (3) ratings of some learning methods used;
- *Program content* evaluation asked participants (1) what they liked best, (2) what required improvement and (3) which content of the program was most useful in their job and

- *Other comments about the program* included subjective assessment of the participants regarding aspects of the conduct and content of the program which were not covered by the other sections of the evaluation form.

12.2.2 Outcomes (product) evaluation

12.2.2.1 Levels of evaluation

Outcomes evaluation refers to the determination of whether the overall learning objectives were achieved by the program participants. In this case, this refers to the enhancement of knowledge and understanding of the participants in diabetes management as well as the improvement of their skill as helper-communicator. This also extends to the application of learning to the workplace. There were three levels of outcomes evaluation which were established particularly for this training program. These levels, together with their indicator and corresponding evaluation measures used are presented in Table 12. 1.

Table 12.1 Levels of outcomes evaluation

Outcomes	Evaluation Measures*
Level 1: Learning outcomes	
• increased knowledge in the diagnosis, pathophysiology, drug therapy and other health care interventions in NIDDM management	Diabetes knowledge test (DKT)
• improved helper-communicator skills, particularly attending and active listening skills, empathic responding, interviewing and influencing skills	Communication knowledge test (CKT) Effective communication skills (ECS) Visual analogue scale in conjunction with videotaped counselling performance
Level 2: Workplace outcomes	Information needs checklist, NIDDM patient diary and referral slips
• Structured counselling	
• Unstructured counselling	NIDDM Tally Card
• Qualitative improvements	Ethnography (interview)
Level 3: Patient outcomes	
• positive decision-making	NIDDM patient diary, interviews
• patient satisfaction	Interview or patient satisfaction questionnaire
• increase in diabetes knowledge	Diabetes patient quiz

* Appendix 8

12.2.2.2 Evaluation measures

Learning outcomes

A. Diabetes knowledge test (DKT)

A 23-item multiple choice questionnaire (Appendix 8.1) was developed by the researcher based on the content of the training program curriculum and existing materials on the subject (Gee 1995; International Diabetes Institute 1994). The questionnaire contained items on aspects of diabetes covered in the morning sessions exemplified by pathophysiology, nutrition, podiatry, blood glucose monitoring. Participants were asked to answer the questions and indicate their answer by encircling the letter/s of their choice. Answers of the participants were compared with the right answers and the test score was based on the number of right answers.

B. Communication knowledge test (CKT)

CKT was composed of a 20-item questionnaire, equivalent to 26 points, on the theoretical aspects of communication covered in the applied communication workshop (Appendix 8.2). The test was based on several references used in the preparation of the applied communication training format (Gilbert and Quintrell 1996; Egan 1994; Nelson-Jones 1983). This was completed similarly to the DKT test.

C. Effective communication skill test (ECS)

This test, intended to measure skill in active listening and empathic responding, was also developed by the researcher with the guidance of a clinical psychologist. It was composed of five vignettes (patient scenarios) depicting five patients, each with a personal description, presenting his/her health, medical, emotional or drug-related concern to the pharmacist (Appendix 8.3). The participants were asked to provide a 2-3 sentence written response to each patient's particular concern. The rating was done by giving a positive score (+1) for every sentence denoting active listening or empathic responding and a negative (–1) for any sentence which did not express those skills. Interviewing questions and influencing statements were only scored (+1) if they were following any empathic or active listening sentence, otherwise they were scored negatively (–1). The ratings were done with the supervision of a clinical psychologist.

D. Visual analogue scale (VAS)

The visual analogue scale (Appendix 8.4) was prepared based on the micro-counselling components of the applied communication skills sessions (Wood 1997; Egan 1994; Ivey and Authier 1978). This scale was used to rate the presence of (1) attending and active listening skills, (2) empathic responding skills, (3) interviewing skills and (4) influencing skills in videotaped counselling. The micro-components of these skills are provided in Table 12.2. Two additional counselling education students were hired to rate the videotaped counselling

of the participants. Prior to this, the raters were trained to rate three 'mock counselling scenarios' prepared by the researcher with the assistance and participation of some third year undergraduate students in the Tasmanian School of Pharmacy. The interrater reliability was computed as the number of agreements divided by the number of agreements and number of disagreements. *Agreement* means having 0 to 3 units of difference while *disagreement* means having more than 4 units of difference between the scores given by the rater for the same skill for the same person (O'Callaghan 1997). The average interrater reliability for all the skills in three scenarios was 1.00.

Table 12.2 Micro-skill components of the applied communication skills workshop

Attending and Active Listening Skills
- Facial expression (faces the person squarely, expressive)
- Posture (adopts an open position, leaning forward, relaxed and comfortable
- Tone and loudness of voice (modulated, audible)
- Verbal encouragers (comments indicating that the other person's message is being followed
- Gaze (makes eye contact, not staring)
- Body gestures (supports verbal message)

Empathic Responding
- Reflecting (tells the other person what he/she thinks the other person is feeling)
- Paraphrasing (puts in different words what the other person said, checks if he/she had been heard correctly)
- Focusing (asks the other person to focus on the main concern)

Interviewing Skills
- Asks open questions (starts with what, how, why)
- Asks closed questions (starts with do, is, are)
- Checks whether the patient has understood or requires more information

Influencing Skills
- Gives advice, shares information, makes suggestions, gives opinion in a clear and concise manner
- Summarises main points of information given

Note: Shaded cells contain the skills involved in receiving and eliciting information while the unshaded cells contain skills involved in responding and giving information.
(Wood 1997; Gilbert and Quintrell 1996; Egan 1994; Jones 1983; Ivey 1978)

Workplace outcomes

Workplace outcomes were divided into kinds: *structured counselling* outcomes with the use of the NIDDM patient counselling kit and *unstructured counselling* outcomes which were the pharmacist-defined ways of applying their learning to their usual counselling. Evaluation will be based on the extent of use of the kit by the pharmacist and also through ethnography, 'how they perceive the application of their learning'. The counselling kit was originally intended to enable the measurement of patient outcomes related to pharmacist's counselling. It was also an exercise for the pharmacists in documenting their counselling interventions, which was mentioned in Chapters 2 and 3 as required skills in patient-oriented counselling. The kit was composed of several devices –information needs checklist, NIDDM patient diary and the referral slip – which were designed to facilitate and document their counselling of NIDDM patients. The NIDDM tally card was added later as a measure of unstructured counselling.

A. Information needs checklist

One of the main barriers to patient counselling identified by community pharmacists in Study 1 (Chapter 6) was the lack of time. The information needs checklist (Appendix 8.5) was designed to alleviate the problem with time. It contains the various aspects of diabetes and its management which were taken up in Studies 3-5 (Chapters 8-10) and were also included in the knowledge component of the training program (Chapter 11). During busy hours, the pharmacist should hand the checklist to a NIDDM patient who can complete it while waiting for his/her prescription to be filled. The rationale was, the use of the checklist was expected to reduce the time needed for the pharmacist to ask questions regarding the previous knowledge or information needs of the patient regarding diabetes. In addition, the checklist would also help focus pharmacist's counselling to those aspects which were identified by the patients as needs. In Study 5 (Chapter 10), it was learned that patients were 'uncertain' about their needs and were not able to ask about them. These individuals were also found in

that study as willing to learn additional information. It is, therefore, possible that when given a means, they could identify what they do not know and avail themselves of pharmacist's counselling.

B. NIDDM patient diary

NIDDM is a complex chronic condition that requires multidisciplinary health care interventions. The assumption of a role in this team by a community pharmacist would necessitate some knowledge of the overall care the patient is receiving from various health care providers as well as the extent of his/her drug therapy. The NIDDM Patient Diary (Appendix 8.6) was developed by the researcher as a device for pharmacists to undertake patient-oriented care in the context of a NIDDM-specific, patient-specific counselling. The diary was divided into six parts: (1) personal information, (2) patient's history, (3) medication profile, (4) diabetes health care consultations, (5) diabetes management/education checklist, (6) pharmacist's intervention plan.

The format of the diary was a mix between two existing patient assessment forms, one used in the Pharmacy Practice Models in South Australia and the other, 'Diabetes education checklist' by the International Diabetes Institute (IDI) Patient Education Section in Melbourne (March et al. 1997; International Diabetes Institute). It was less comprehensive and clinical in nature than the South Australian model, in consideration of the community pharmacist's time and patient medical information limitation. It did not require the medical and laboratory data of the IDI model. It was designed to suit the ordinary pharmacist, and will not require extensive training to implement and one which will only depend on patient-provided data.

C. Referral slip

One of the roles expected of the pharmacist by other health professionals in Chapter 9 was his/her referral role. As a recognised intervention, pharmacists should provide some

documentation to establish linkage with other health professionals especially in the Hobart area. The referral slip (Appendix 8.7) which contains an introductory note, name of the patient, nature of referral, name of the pharmacist and the pharmacy, was also expected to enable the community pharmacist to increase his/her contribution to NIDDM patient management through the referral role.

D. NIDDM counselling tally card

The tally card was not an original component of the patient counselling kit (Appendix 8.10). It was a contingency measure developed due to the evaluation difficulties encountered during the first three months of the evaluation. Compared to the NIDDM patient diary, the tally card was more convenient to use and allowed immediate recording of any pharmacist's counselling intervention for NIDDM patients. One disadvantage though was that it was not designed for personalised care but rather a simple measure of the number and content of counselling events a pharmacist had with NIDDM patients. Since it only records the quantitative aspect of pharmacist's counselling, neither the personal details of the patient nor the detailed description of the counselling intervention provided by the pharmacist was recorded. As shown in Appendix 8.10, the tally card was more of a listing of possible pharmacist's counselling interventions such as (1) aspects of drug information (eg. purpose of medication, precautions), (2) other aspects (eg. nutrition, blood glucose monitoring) and (3) NIDDM patient counselling kit devices (eg. information checklist, patient diary).

E. Ethnography

Not all outcomes can be measured quantitatively. As was discussed in Chapters 4 and 5, qualitative methods can be employed if a greater understanding of a phenomenon is desired. Previous studies in Chapter 3 had indicated that there are many factors which contribute to variable performance of pharmacists in counselling and that there is a need for researchers to explore this issue through the language, meanings and experiences of the pharmacists under study (De Young 1996). Thus, ethnography was viewed as an appropriate method to

determine pharmacists' views, not only about the training program, but also about the factors which confronted their greater involvement in patient counselling. A set of questions was used for the interviews (Appendix 8.8). The questions explored their views about (1) the term 'being busy' in a pharmacy, (2) their description of the patient counselling role of a pharmacist, (3) feedback from patients about their counselling, (4) barriers in their NIDDM counselling within the last 6 months, (5) applications of training to the workplace and (6) how the training program could best suit their professional need.

12.2.3 Case studies

To enable an holistic understanding of individual pharmacists on the basis of several personal attributes – their demographic characteristics, learning achievement, factors affecting counselling performance and views on counselling – data pertaining to each individual were compiled to make up one case study. In this work, there were 10 case studies (Appendix 10.1 to 10.10). To preserve anonymity, code names were given to the 10 participants using native Australian trees (males) and flowers (females). The code names for the males were: Waratah, Myrtle, Sassafrass and Wattle. Female code names were: Boronia, Correa, Heath, Scoparia, Iris and Hibertia.

12.2.4 Follow-up methods

One form of follow-up during the evaluation period was a newsletter entitled, *NIDDM Counselling Update* (Appendix 9.3). The newsletter contained information regarding aspects of pharmacist's patient counselling, the needs of NIDDM patients, drug therapy and news written by the researcher about the progress of the 10 pharmacists in their patient counselling. The news was based on the visits made by the researcher to the participants' workplaces.

Visits were made on three separate occasions to the pharmacies where the pharmacists worked and a government office (for the government community pharmacist), one was two

months after the training (June – July 1997), the second visit was in late August to September and the other was six months after (October – November 1997). The first visit had two purposes: to collect the completed post-tests of DKT, CKT and ECS and to find out pharmacists' accomplishments with regards to their NIDDM patient counselling and the kit. Pharmacists were engaged in conversations with the researcher for which field notes were taken. The second visit was to deliver and explain the use of the NIDDM Counselling tally card, a contingency evaluation tool developed by the researcher to address evaluation problems encountered during the first visit (Appendix 8.10). The third visit was to conduct audio-taped interviews regarding their counselling practice and to collect the tally cards.

12.2.5 Statistical methods

Because of the small number of participants, only descriptive statistics and measures of central tendencies were used to determine individual and group learning performances. Data regarding the participants' personal information, program and learning performances were stored in Statview 4.0 while qualitative information was stored as Word 6.0 files for the Macintosh.

12.3 Results

12.3.1 Program evaluation

The overall program evaluation forms were collected from the pharmacist during the first visit (July 1996) and the responses were collated. Tables 11.3, 11.4a, 11.4b and 11. 5 summarise the results:

Table 11.3 General evaluation

Aspect of Evaluation	Category	Count (%)
• Enhancement of knowledge and understanding of NIDDM diagnosis and pathophysiology	Very successful Successful	7 (78) 2 (22)
• Enhancement of knowledge and understanding of drug therapy	Very successful Successful	7 (78) 2 (22)
• Enhancement of knowledge and understanding of the various aspects of diabetes management	Very successful Successful	7 (70) 3 (30)
• Increase in skill as helper-communicator	Very successful Successful	5 (50) 5 (50)
• Overall reaction to the training program	Excellent Better than expected	8 (80) 2 (20)
• Meeting of pharmacist's professional needs by the training program	Yes	10 (100)
• Suitability of program format to future training about other chronic illness	Yes	10 (100)
• Number of resource persons involved	Just right	10 (100)
• Balance between lectures, group discussions and exercises	Good balance Too many exercises	9 (90) 1 (10)

Table 11.4a Ratings of resource persons (morning sessions)

Aspect of Evaluation	Category	Count (%)
• Knowledge of subject matter	Very good Good	9 (90) 1 (10)
• Organisation and preparation	Very good Good	7 (70) 3 (30)
• Style and delivery	Very good Good	6 (60) 4 (40)
• Responsiveness to participants	Very good Good	5 (50) 5 (50)
• Creation of appropriate learning atmosphere	Very good Good	5 (50) 5 (50)

Table 11.4b Ratings of trainers (afternoon workshops)

Aspect of Evaluation	Category	Count (%)
• Knowledge of subject matter	Very good Good	5 (56) 4 (44)
• Organisation and preparation	Very good Good Fair	4 (45) 4 (45) 1 (10)
• Style and delivery	Very good Good	5 (56) 4 (44)
• Responsiveness to participants	Very good Good	5 (56) 4 (44)
• Creation of appropriate learning atmosphere	Very good Good	5 (56) 5 (44)

Table 11.5 Ratings of learning approach/methods/materials used

Aspect of evaluation	Category	Count (%)
• Multidisciplinary approach	Excellent Very good	5 (50) 5 (50)
• Videotaping in afternoon workshops	Very good Good	7 (70) 3 (30)
• Audio-visual aids	Excellent Very good Good	1 (10) 6 (60) 3 (30)
• Written handouts and other materials	Very good Good	8 (80) 2 (20)

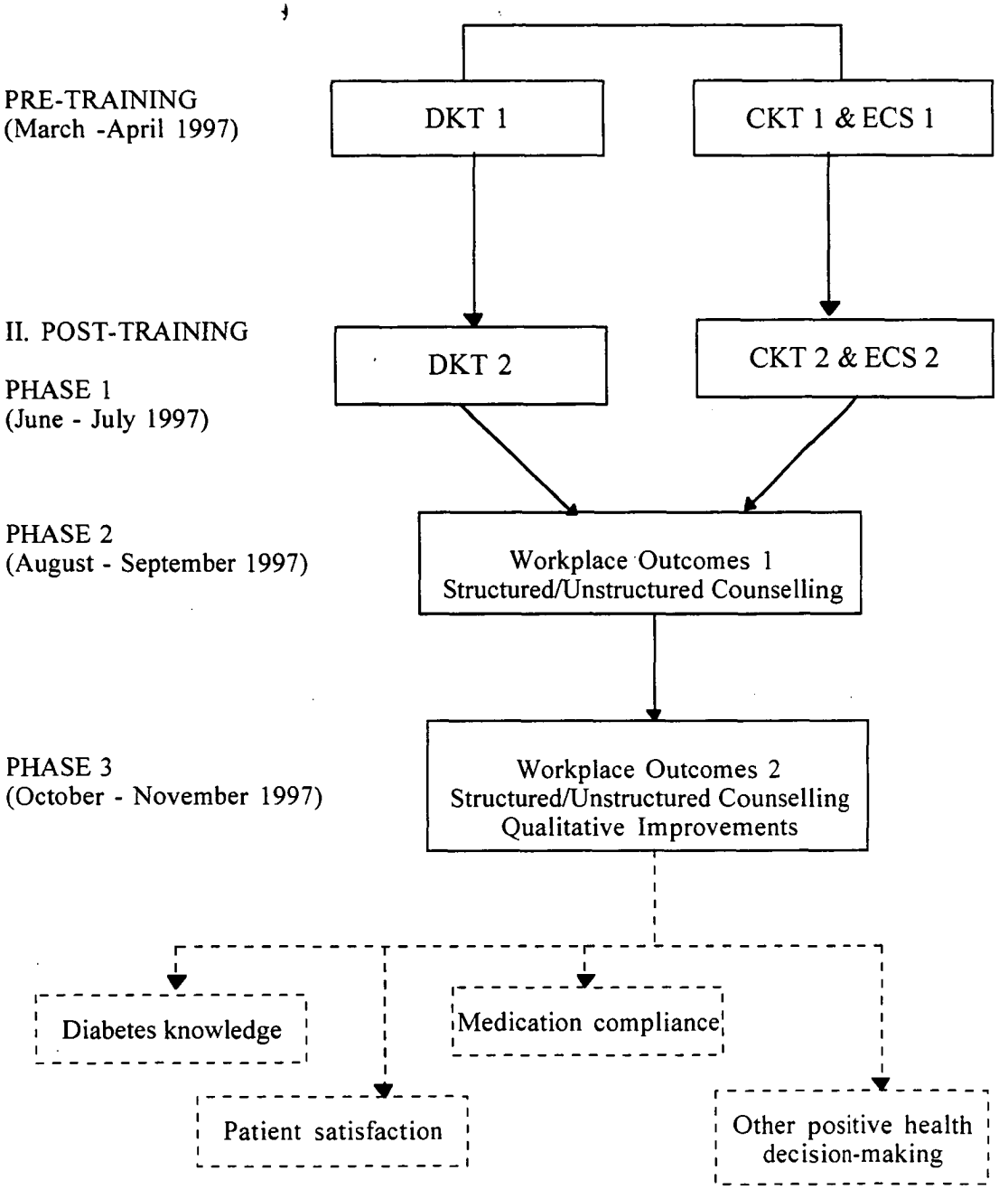
Pharmacists' subjective comments about the best-liked aspects of the program were varied. About 5 (50%) of the pharmacists greatly appreciated the information gained out of the morning sessions, 3 (30%) liked the overall format of the program and the rest liked the choice of the speakers and the relevance of the topics chosen.

There were aspects for which participants recommended improvement. These were: more guidance in the application of counselling to the workplace, the consideration of real pharmacist's timeframe in the counselling videotaping sessions, use of real blood in the demonstration about blood glucose monitoring devices, time management and the need for more handouts. One person suggested that a series of one-day courses should be offered throughout the year and the counselling topics distributed as modules.

Half of the participants chose specific lectures (eg. podiatry, nutrition, pathophysiology, drug therapy) as the most useful aspect of the program. Other pharmacists mentioned counselling sessions, the combination of diabetes knowledge and counselling skills and the confidence they gained in discussing with patients.

12.3.2 Outcomes evaluation

The flowchart and the timetable used for the outcomes evaluation is provided in Figure 12.1.



Note: Those aspects evaluated during the 6-month evaluation period are indicated by solid lines.

Figure 12.1 Outcomes evaluation flowchart

12.3.2.1 Learning outcomes

DKT, CKT and ECS

The pre-tests of the diabetes knowledge test (DKT), effective communication knowledge test (CKT) and the effective counselling skills test (ECS) were administered to the participants during the training, prior to educational intervention. The post-tests were sent to the participants 60 days after the training. The completed tests forms were collected, checked and scored.

Figure 12.2 shows the group mean scores for the knowledge and skills tests: diabetes knowledge test (DKT), effective communication knowledge test (CKT) and effective communication skills (ECS), N=10.

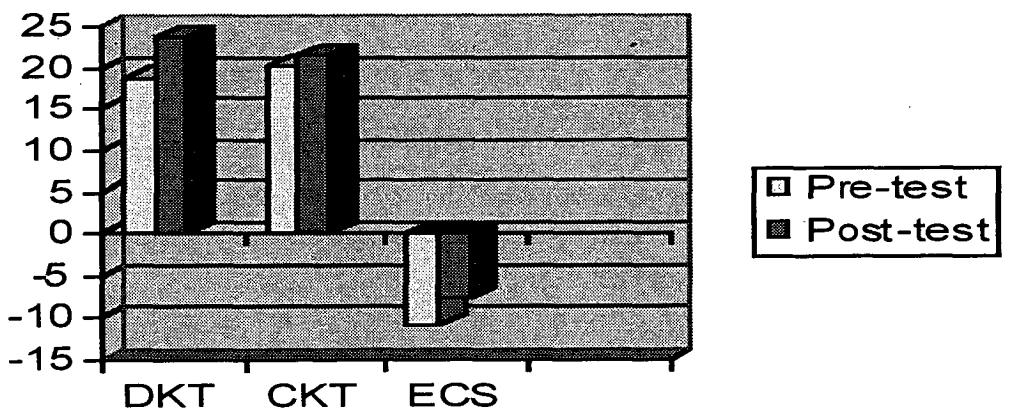


Figure 12.2 Group mean scores for the pre- and post-test of DKT, CKT and ECS

Figure 12.2 showed increase in the post-test group scores. In DKT, there was an increase from a mean score of 18.8 (s.d. ± 3, min = 12, max = 23) to 23.6 (s.d. ± 2, min = 21, max = 27). In CKT, there was a slight increase from a mean score of 20.2 (s.d. ± 2, min = 17, max = 24) to 21.4 (s.d.± 2, min = 19, max = 24). The ECS scores, which measured the active listening and empathic responding skills of the participants, had increased from – 10.9 (s.d. ± 3, min = – 15, max = – 6) to – 7.7 (s.d. ± 4.6, min = – 14, max = 1).

Visual analogue scale

Videotapes of participants' counselling during Day 2 (pre-test) and Day 3 (post-test) were collected and transferred randomly to a master tape. The master tape was viewed by the two raters during a two-hour period. There were only 15 completed scenarios analysed since one of the videotaped scenario lacked sound, two were on a defective tape and another was not properly recorded. In addition, there was one participant who was not able to be on any tape at all either in the pre- or the post-taping. Therefore, only 15 scenarios scored by the raters were included in this report (Appendix 2.2). Group mean differences, only for those with complete pre- and post-test scores were calculated. Both the 'attending and active listening skills' and empathic responding skills' though not significant, showed positive increase, + 0.22 and + 0.58, respectively. The 'interviewing skills' and the 'influencing skills' group mean differences had decreased, – 0.18 and 0.39, respectively but this was not also considered significant. The raters also gave constructive comments about the skills shown by each pharmacist on the videotape. The comments, some of which are tabulated in Table 11.6, were reported to the pharmacists during the researcher's second visit.

Table 11.6 Raters' subjective comments on videotaped scenarios

Participant	Comments
Boronia	• excellent summary, influencing skills • you really checked for patient's understanding • very good interviewing skills, nice balanced exchange of information
Sassafras	• excellent empathic listening • gentle, steady pacing • hooray! someone asked about feelings • you did check for understanding
Waratah	• very good empathy skills, kind of support kept the man from falling apart • good focus on client's needs, stayed on track with medications, referrals, use of 'follow-up' is a good start for a person newly-diagnosed • good reflecting skills, did not get 'caught up' in unrelated issues
Scoparia	• the problem did not move, need more exploring questions • good focus on important issues

12.3.3 Workplace outcomes

12.3.3.1 Structured counselling

Most pharmacists were visited three times in their respective workplaces during the evaluation period. As shown in Figure 12.1, these visits were from June to July, August to September and October to November, 1997. During each visit, the researcher took field notes and had some discussion with each participant. Four of the 10 participants took one month to two months holiday and were met only twice during the 6-month period. Table 11.7 showed how many of the 10 pharmacists used the counselling devices in the NIDDM patient counselling kit.

Table 11.7 Use of the NIDDM patient counselling kit

Devices	Number of times used by pharmacist with patients									
	WAR	MYR	BOR	COR	HEA	SAS	SCO	IRIS	HIB	WAT
Information checklist	3	-	5	4	1	3	-	-	-	5
Referral slip	-	-	-	-	-	2	-	-	-	-
Consent form	3	-	-	3	1	-	-	-	-	-
NIDDM patient diary				1	1	-	-	-	-	-
Tally card	5	-	12	10	6	4	-	7	7	9

During the first three months of the evaluation period, pharmacists only had copies of information checklist, referral slips, consent forms and NIDDM patient diaries. When it was noted that pharmacists found it difficult to recruit patient into the structured counselling project, then the tally cards were distributed on the fourth month. Table 11.7 showed that more pharmacists were able to use the tally card than any other devices in the counselling kit. Neither Myrtle nor Scoparia was able to use any of the devices in the kit. Out of seven patients who completed consent forms for the structured counselling, only two patients of

two pharmacists were able to complete the NIDDM patient diary. The consultation, according to the pharmacists, took an average of 20 minutes. The two pharmacists took time to record the personal information, medical history of the patients, drugs currently taken, frequency of consultation with various health professionals and level of knowledge in various aspects of diabetes care.

12.3.3.2 Unstructured counselling

The tally cards of the 8 pharmacists contained the information they had provided in their usual or unstructured NIDDM counselling. Table 11.8 presents the content of counselling by the 8 pharmacists in the study who used the tally card for the remaining evaluation period of six to eight weeks.

Table 11.8 Content of pharmacists' counselling based on the 6-8 weeks tally card record

Specific Intervention	Number of times used by pharmacist in counselling NIDDM patients									
	WAR	MYR	BOR	COR	HEA	SAS	SCO*	IRIS	HIB	WAT
DRUG INFO										
• name and purpose of drug	2		6	10	-	4		1	6	4
• dosage	2		6	10	-	4		1	6	4
• direction for use	2		6	10	2	4		1	6	4
• adverse effects	2		6	1	1	1		-	5	1
• drug interaction	1		6	1	2	1		1	3	6
• contraindication	1		6	-	-	2		-	3	2
• precautions	2		10	-	-	4		-	-	7
Other aspects of HEALTH CARE										
• diet plan	1	-	11	9	4	4		2	1	2
• exercise	-		7	5	2	4		2	1	2
• blood glucose monitoring	2		11	3	2	1		-	1	1
• footcare	2		5	5	1	3		-	-	-
• eye care	2		8	-	-	3		-	1	
• diabetes fact/ Nutratech card	5		12	-	-			1	-	-
• other				1	1			3	-	

*Her case was taken up separately as her application of learning was different from the others.

The preceding table provided an overview of the counselling that the pharmacists provided over a period of 6 to 8 weeks. The examination of each tally card showed that specific

interventions varied from pharmacist to pharmacist, and the content, from patient to patient. The cards showed that a great deal of counselling was spent on basic drug information, however, there were pharmacists like Boronia and Wattle who gave information on drug interactions and precautions to take while on medication. The tally cards also showed that pharmacists' counselling not merely consisted of drug information but other aspects of health care as well. There were pharmacists such as Boronia and Correa who provided more written information about other aspects of health care. Aspects such as diet, footcare and blood glucose monitoring were also taken up in pharmacists' counselling.

Scoparia was not able to recruit any patient on the basis of her job description. However, she did report about her various interventions related to NIDDM counselling. Since the time of the training, she had spoken on three public occasions about diabetes, one was at a community health display in a shopping centre where she was also able to distribute a lot of materials on diabetes. Another occasion was at a community health seminar for NIDDM patients where she talked about the various aspects of diabetes health care. She provided "Being Mediwise" information, Diabetes fact card and a leaflet on safe exercise for older adults. The other was a seminar for workers about diabetes. Only three months after the training, she was already organising an applied communication skills training for community pharmacists in the North. However, the latter was not realised because of the limited number of interested pharmacists.

12.3.3.3 Qualitative improvements

In addition to quantitative measures, interviews were conducted by the researcher in the participants' respective workplaces during the third visit. Excerpts of interview responses are provided in Appendix 10. Prior to asking them about their application of the knowledge and skills components of the training, they were asked about other aspects of counselling which could shed light to previous factors identified in Chapter 6 as affecting pharmacists' counselling and perhaps, explain the variable application of learning found in this study.

In the interview, pharmacists were asked to describe their average day in terms of being 'busy'. Responses to this question indicated that being 'busy' was associated by pharmacists with:

Volume of prescriptions

> "...in the mornings, it gets busy, you get there at 9 am and I'm talking of H pharmacy, often there are people waiting on the doorstep and we have a few methadone patients waiting on the doorstep...that could be really stressful" (Iris, Appendix 10.8)

> "Three out of four pharmacies I would describe as very hectic...where it is often difficult to give out instructions because of the pressure of the scripts waiting...I find it a frustration...you're constantly on the 'go'." (Hibertia, Appendix 10.9)

> "...we're next to a medical centre and people tend to wait for their scripts so we end up having 5 to 6 people in the pharmacy at one time..." (Wattle, Appendix 10.10)

Administrative tasks

> "It is very busy because I'm the only one [pharmacist] on site also administrative tasks which require paperwork, I've been signing documents by people which is probably 2-3 days sometimes more, sometimes less and I do have 2 girls who operate the shop and they know how to work in the dispensary and the computer and everything they do has to be checked" (Myrtle, Appendix 10.2)

> "...book work, statistics, invoices, statements and accounts...dealing with orders...unpacking ethical drugs and attending to drug reps and OTC reps...manage two pharmacies and their problems...I never leave work on time" (Sassafras, Appendix 10.6)

Nursing home drug supply

> "I'm busy because I'm mainly responsible for the medications for three nursing homes and it is sort of a week for it" (Correa, Appendix 10.4)

Health advice

> "mainly talking to people who call on the pharmacy for advice on health problems, prescription and non-prescription and it is very constant all day" (Waratah, Appendix 10.1)

> "...and quite often Mondays, there's babies in the shop and health...it can be busy" (Myrtle, Appendix 10.2)

With regards to the counselling role of the pharmacist, all of the participants considered it as 'important' or 'essential". They have associated this role with the need of the patient to be informed about their medications which many of them indicated, had been overlooked by the general practitioner. Emphasis was given by the majority to 'new prescriptions':

> "...first time [newly-diagnosed] spend more time with them..." (Waratah, 10.1)

> "I'll endeavour if anyone's on anything new to give them a guideline and to make sure that they know what they're taking and why they're taking it because some of our dear colleague GPs do not explain what they should be doing with their medications..." (Boronia, Appendix 10.3)

> "It is actually important when medicines are initiated especially with NIDDM and asthma...they [patients] actually did not know how to use their tablets" (Correa, Appendix 10.4)

> "an essential part of initial medication of a patient...and often doctors have little to explain to patients regarding their medications" (Sassafras, Appendix 10.6)

"...very important role...I do not think doctors have spent more time talking to their patients about drugs and possible side effects, about dose, how long it is gonna take to work, things that should be discussed when we give out a prescription to a patient" (Hibertia, Appendix 10.9)

"Probably the most opportune period is when they are actually initiated on a therapy rather than those who are currently on treatment" (Wattle, Appendix 10.10)

A majority mentioned that they were getting more positive than negative feedback from patients. Positive feedback is of various forms such as verbal affirmation, loyalty and heeding of pharmacists' advice. All of the pharmacists derived some degree of self-satisfaction, job fulfilment and motivation from received positive feedback. Some pharmacists associate negative feedback with the patients' refusal to be counselled, others mentioned that it was not at all related to counselling, but to other reasons like the unavailability of stock. No one among the respondents was particularly affected with negative feedback.

With regards to workplace barriers to NIDDM counselling during the evaluation period, pharmacists were able to point out significant factors:

Availability of time

"The biggest problem I suppose is not being able to allocate uninterrupted time, to have the time to be able to talk to people and to discuss the diabetes with them" (Waratah, Appendix 10.1)

"I'm a sole pharmacist...I do not have [time] to devote to any discussion...I'm not just talking about NIDDM but also of other counselling...if it cropped up 10 minutes or more, in the meantime, people tend to get annoyed for having to wait and wait" (Myrtle, Appendix 10.2)

"If you've got a stack of prescriptions waiting, you just do not feel that you can spare the time on one occasion, unfortunately..." (Heath, Appendix 10.5)

"Time is always a barrier , often you're busy with prescriptions filed up and you feel you'd like to spend more time with a patient but others are waiting and others do not see it as a necessity because they're jumping up and down and want to get their prescription and be away..." (Sassafras, Appendix 10.6)

"Time restraint...I'd love to sit down with every NIDDM patient and go through this [the kit] to give them all the info, but you cannot just do that..." (Hibertia, Appendix 10.9)

Remuneration

Remuneration was always related by some pharmacists to the hiring of an additional pharmacist so that they could have better counselling time with the patient. This decision usually falls to the owner/manager. Two pharmacists' statements which exemplify this observation are:

"To do counselling properly, I think you need two pharmacists, in a business, you have to be doing a minimum of 200 scripts per day... we are 150 scripts a day...not big enough to justify having another pharmacist on site but more than enough to keep me occupied" (Myrtle, Appendix 10.2)

"...you can solve it [counselling] with more staff...is a cost factor unless the person is so conscious of the fact...it is a chicken and egg situation...let's face it, we're the only health providers who give our advice for free...unless we get some remuneration from it...it is self-satisfying but financially, we can only do so much" (Sassafras, Appendix 10.6)

Job position

The locums were aware that their job position hindered them from establishing constant relationship with the people and these participants found this aspect frustrating.

> "Also if you work at different places, it is hard to know whether they [pharmacies] are capable of doing it as well...when working as a reliever, you can work in a pharmacy where you've never worked before and it is quite distressing...learning the suburb, different computers...different cash registers and sort of things" (Correa, Appendix 10.5)

> "I think the problem was that I am a locum and working at different places at that time...I only see them [patients] on an irregular basis...must be easier if you're working at the same pharmacy all the time...the same patients you can see them a bit better...disjointedness in being in different locations...having different patients all the time" (Iris, Appendix 10.8)

Physical layout

The physical set up of the pharmacies visited was mentioned by some pharmacists to affect the quality and extent of their counselling and there was usually a requirement for privacy, because they perceive that some patients may be sensitive to this matter.

> "We have to have somewhere where we could do it - semi-private counselling area and we'll have the opportunity without being distracted" (Waratah, Appendix 10.1)

> "I think we should be able to get out and get pretty close to the patients and even having a bench bet you makes it hard for me to do it [counselling]..." (Wattle, Appendix 10.10)

> "Space for privacy is a problem within the pharmacy" (Sassafras, Appendix 10.7)

Patient-related problems were also mentioned as affecting their counselling. There were two particular problems which pharmacists associated with patients; the lack of need for information and the language barrier.

Lack of need for information

> "Some people, I think, do not really want to accept that they have diabetes and they do not want to talk about it, they take their medications and try to forget all about it...it is not a part of their life...and these people are difficult to draw out" (Heath, Appendix 10.5)

> "[If] people are prepared to stop, listen and act on some of the things you've suggested...a lot of them are so xxxx minded, they will continue a long way ignoring what you said...it is much the same with NIDDM patients who just don't care as long as they get their medicines" (Myrtle, Appendix 10.2)

> "There was an obese lady whom I want to talk to about diet but she said that "I could see the doctor and change the medications" and I think the one that could change things is diet...that was one barrier I have not come across before" (Correa, Appendix 10.4)

> "I find it difficult for people to commit themselves to that [structured counselling], they take the pamphlets away and you would not see them again...I think they're a bit shy, a bit embarrassed that they're NIDDM patients, they do not want to tell everybody about those things" (Iris, Appendix 10.8)

> "People do not want to know the information...one person who's newly-diagnosed was very upset and just want not to talk about it...another man who's newly-diagnosed, appeared to be more controlled and that his blood glucose is good and he thought that it is all there is and that is the end of the story, full stop" (Hibertia, Appendix 10.9)

"Another main problem is because most of these patients were patients that have been treated for long period of time, that's it is very hard to convince them to actually put any new knowledge to them..." (Wattle, Appendix 10.10)

Language barrier

Some pharmacists did encounter difficulty counselling patients with non-English speaking background, both in the giving and receiving of information.

"Sometimes the language problem is true and a lot of our customers have not got a good background of English and I find that you do not want to intrude too much because some of them are very defensive and that's been a barrier" (Correa, Appendix, 10.4)

"Language is a problem, yesterday one has English which is not very good, very difficult" (Heath, Appendix 10.5)

"A lot of patients I've seen do not have English as their first language and there'd been communication problems...it has been difficult enough to establish who is taking the medicine to start with, often female and male are on medication and often they've got them intermixed...it has to be sorted out...that all I can do is to get the information...they just do not understand...I find it very frustrating..." (Hibertia, Appendix 10.9)

There is only one problem which has been attributed by pharmacists to themselves and that was documentation which was required in evaluating both structured and unstructured counselling in the workplace. Waratah, among others, was quite detailed in his concern for documentation which he also associated with other workplace concerns. The other pharmacists simply admitted the lack of skill for it.

In the same way, even trying to document what we're doing...it would be good to be able to document that but we're not set up properly to do it and included in that, too, this diabetes ...the public are not conditioned to spending time in documenting the discussion...I think, it is probably getting closer but still, it is difficult...we have to have a list in front of us and we have to go through the list with them, talking about the different aspects of it but I do not see any way out of that really and we have to make the notes as we went because if we left it for a few minutes then, we probably forget some of the things that I've said and of course, in the pharmacy again, straight away, somebody else will come with a prescription and so we have to make notes at that time in front of the person and I think that this is the problem of having the place to do it and the time to do it..." (Waratah, Appendix 10.1)

"Main barrier for me is keeping records...I like that to be done but we follow on quite well" (Boronia, Appendix 10.3)

"The tally card was good but I do not always have it with me and I'm trying to remember whom I've spoken to and what I've spoken - I'm not very good at keeping records at all...and also when you're working, I mean you do the work that you have to do...that comes first, the documentation will have to when I'm not doing anything else" (Heath, Appendix 10.5)

A reason why pharmacists provide counselling is because they perceive that the physician was unable to provide adequate information to the patient. However, one of the participants identified a barrier which was related to the adequate counselling of a physician practising nearby.

"The doctor got enthusiastic on time [about NIDDM] and so, he beat me to it [patient counselling] but I think I'm more consistent than he is" (Boronia, Appendix 10.3)

When Boronia asked the physician's patients about their information needs, they replied that they were already given that information and all she could do was to give them written materials from her Nutratech kiosk.

After asking about the abovementioned aspects of their counselling practice, they were questioned about how the learning experience contributed to their workplace experience. Pharmacists differed in their responses. Some of them had a definite purpose in mind when they undertook the training while others just discovered how the training helped them at work. Their responses were classified as follows:

Awareness of NIDDM patients' health needs

> "Having been involved in this counselling project, it certainly raised my awareness of the things we need to talk to, to the diabetes patients...talking about their feet and their eyes, seeing that they're being tested and followed-up and their diet...it has raised that awareness..." (Waratah, Appendix 10.1)

> "It certainly made me more aware of the NIDDM patient's program as to the more deeper understanding of the problem...I knew it was there...it is all put together into one and it certainly made me more aware..." (Sassafras, Appendix 10.6)

> "I think I've become much more aware of the whole treatment of a diabetic...when you see what drugs a patient has, what the doctor does and several types to decrease blood sugar...now I understand it better...you're keen to follow certain checking on the patients...It also makes it easier to follow other things like the eye damage, foot problems...I just think that I'm much more aware of the total involvement of body in diabetes and it is just to look out for that sort of thing in the patients that you meet...it makes you more informed and you can give much more advice when you've understood it..." (Iris, Appendix 10.8)

Expansion of knowledge base

"The training program has given me some background information which I was not conversant with..." (Myrtle, Appendix 10.2)

"My knowledge of physiology and diagnostics is not huge or was not, I think it had improved and I think that it had helped me with patients and with the staff...I have applied it" (Boronia, Appendix 10.3)

"I guess the other way I've applied it [learning] is anywhere I've been...is about the concept of learning about the disease and its different aspects...to learn about the disease gives the pharmacist more credibility" (Scoparia, Appendix 10.7)

"My knowledge base is not very good, I suppose I did not put much thought about it until I took the course in a disease state..." (Hibertia, Appendix 10.9)

I've counselled patients [NIDDM] about UTI and I've noticed that that was part of the drug therapy lecture and that's been quite useful...I think that one of our patients could have ended up in the hospital and he was with a UTI but I spoke to the GP about it and probably it has aborted that particular problem...I know that I have not saved a life but it is very close to it" (Wattle, Appendix 10.10)

Personal confidence in counselling

"I suppose that it [training] has given me a lot of confidence to talk to people...about the knowledge problem, you know I feel more confident to talk about their diet, proper exercise and things...I think they like about diet mostly..." (Correa, Appendix 10.4)

"I certainly feel a lot more confident to talk to people and it was something I did not really know about...I say that I've learned from the patient as well in talking to

them...you find out things you did not think about when you're just doing the theory...it is been quite helpful that way..." (Heath, Appendix 10.5)

"...makes you much more confident when you know what you're talking about...you know whom to refer them [patients] to when they need help about things...I do think it is very valuable even if some about it is...basic" (Iris, Appendix 10.8)

"I really did not look into it [NIDDM] too much but now I'm certainly well informed...which makes me feel more confident on the imparting of advice...I think I'm certainly trying to get more information across to patients..." (Hibertia, Appendix 10.9)

Hibertia added that the learning experience had motivated her to learn about NIDDM on her own which she considered excellent. Boronia, on the other hand, had imparted aspects of the training to train her own staff. She mentioned, "every time one of us [she and the staff] has to go on a training course, we try to have half an hour within two days of the training course where the person who went has to tell the rest of the staff what it is about...that gives me and some of the staff some ideas...got on board...they gained as well".

The training on applied communication had also helped some of the participants in their counselling, particularly those without previous training in that aspect.

"It has been really good taking it [knowledge on psychology aspect] on board, not just with diabetes but even with losing weight" (Correa, Appendix 10.4)

"I think probably with counselling, I sort of picked up the parts of that section and used it in practice...it is just probably things I've been doing any way but I'm more aware I'm doing it...and I think mainly the recounting of points when you actually go through things you did not summarise it a bit more and even written notes that I have not in the past written down...I think, I'll be more aware of things as I go..." (Wattle, Appendix 10.10).

12.4 Discussion

12.4.1 Program evaluation

Enhancement of knowledge in all aspects was indicated by more than 70% of the participants but only half perceived an increase in their helper-communicator skill. One possible reason for this was that four participants who had previous training in counselling found it a repetition of their previous learning. Some of their comments were:

> "...I find the counselling training a bit laborious because I had previous counselling training" (Boronia, Appendix 10.3)

> "counselling skills...I've done that in the past with children...not always easy to apply that knowledge because it is not a perfect world and it always worries a lot depending on what time you've got and what mood your patient was in...a lot of variants there...I think it depends a lot also on your personality whether you're a chatty person or not makes a lot of difference really how you go about it" (Iris, Appendix 10.8)

> "I know, it is quite hard for the counselling bit just having it for three sessions and I'm not quite sure how you can actually squash it...I do not think, it can, because I know how much has to be put into it..." (Scoparia, Appendix 10.7)

Since previous studies on pharmacists' training needs assessment (Chapters 6 and 8) did not cover the determination of communication skills due to the difficulty of the process and the limitation of resources, applied communication skills training was provided on the basis that (1) empathy and other facilitating communication skills were found to affect health professional – patient communication (Chapter 2) and that (2) previous studies had indicated low empathy among pharmacists (Chapter 3).

The resource persons in the morning sessions were rated 'very good' by more than 60% of the participants, particularly in their knowledge of the subject matter, organisation and preparation and style and delivery. The afternoon trainers, on one hand, received the same rating but slightly lower from 60% of the participants. It appeared that selection of resource persons on the criteria used (Chapter 9) had been helpful.

The multidisciplinary approach of the training program was judged excellent by 50% of the participants. Videotaping, to which not one had been exposed before, also received a 'very good' rating from the participants. Waratah (Appendix 10.1) mentioned that:

> "I certainly found the training program very useful, the diabetes knowledge and actual counselling skill, too...it was not easy to subject yourself to that [videotaped counselling] but it was done in a very easy way...I think the way it was done on video was made easy for us and it would be good if other pharmacists could have the opportunity to be able to see themselves as others see them"

The other learning materials such as audio-visual aids and written handouts were rated equally high as well. However, it was suggested that the use of real blood would have improved the demonstration on blood glucose monitoring devices and an increase in the number of handouts from the resource speakers would be beneficial to the participants.

It was shown that pharmacists had varied preferences for the aspects of the program they liked best. Perhaps as adults, they pursue education as a personal choice based on different motivating factors and orientations. Their choice was often based on subjective factors which could be addressed by a training program through the use of a variety of learning approaches. Overall, the training program had adequately addressed this particular concern in adult learning.

12.4.2 Learning evaluation

Pre-tests (DKT, CKT and ECS) were administered prior to the actual learning intervention and were post-tested two months after the training. One reason for delaying the post-tests to a later period was to have a longer span of time on which to base participants' learning. It was intended to test whether there would still be positive differences between pre-and post-tests during a 2-3 month period. Results showed that there was a positive increase in the participants' post-test scores particularly in the diabetes knowledge test. The increase in communication knowledge during the same period was minimal. As for the communication skill test which measured the active listening and empathic responding skills, there was a + 3 increase from -10.9 to -7.7. The negative values were generated since there seemed to be a lack of recognition of feelings (eg. worry, anxiety) of patients in the scenario among the responses of the participants. After the training, there was a slight improvement in the way they responded to the written patient scenarios. This result was supported by the video ratings which had also indicated a slight increase in the active listening and empathic responding skills. The time spent by the pharmacists in the videotaping and the debriefing of the videotapes may not be enough as there was no baseline information as to the adequate amount of time required for significant changes to occur. A review on the length of micro-counselling training programs reported that for lower order skills like attending and empathic responding skills, number of hours can vary from 0.30 to 30 hours, and therefore with this range, it is difficult to establish how much was needed (Baker and Daniels 1990). Although there are positive signs that learning has occurred, further training and perhaps, longer training time might be required for these pharmacists to attain significant improvement in these areas.

12.4.3 Workplace evaluation

12.4.3.1 Structured counselling

The pharmacists' performance of structured counselling was measured through the use of the components of the NIDDM patient counselling kit. In Table 11.7, only 8 pharmacists were

able to use any of the devices provided. There was a low usage of devices that required more time with a patient. The tally card recorded 60 patient contacts, 21 for information checklist, 7 consent forms, 2 for referral slips and 2 patients for the NIDDM patient diary. The tally card was merely a record of patient contacts and therefore, did not require much time on both the part of the pharmacist and the patient. As for the other components, an investment of time, about 15-20 minutes, will be required for establishing the patient data. Although the NIDDM patient diary appeared to be useful as was reported by the participants who tried using it with patients, perhaps the diary has to be tested and re-tested for its applicability to specific pharmacy situations. It was also found by this study that pharmacists required some practical training on documentation. Even pharmacists who appeared to be active in patient counselling such as Waratah, Boronia and Wattle were faced with the difficulty of consistently documenting their counselling interventions. This skill had already been recognised in other studies in relation to the implementation of pharmaceutical care in the U.S. (Chapter 2, Table 2.4). Results of this study confirmed that this skill is also lacking among Tasmanian community pharmacists.

Since only two patients were able to be documented using the NIDDM patient diary, then the measurement of patient outcomes was not made possible. There were seven patients who sent their consent forms and were given patient knowledge test by the researcher but the required counselling intervention had not been provided by most of the pharmacists. In addition, there were also patients who took the consent forms but did not send back the completed questionnaires. It seemed that the implementation of the structured counselling would require more follow-up other than visits or newsletters if incorporation in pharmacists' daily practice is desired. However, no attempt was made to strengthen this aspect for the following reasons: (1) the objective of the exercise was to determine how pharmacists incorporate patient-oriented tasks without much interference or external pressure, eg. research group, but relying mainly on the willingness of the individual pharmacists, and given such situation, (2) to find out about the factors that could retard the

translation of patient-oriented tasks into the workplace. In a way, the study had identified factors which actually confronted the pharmacists in their intent to introduce change in the workplace.

The task of addressing workplace-related factors was one of the objectives of the South Australian Community Pharmacy Practice Model Project (March et al. 1997). Using action-research approach, changes in workplace system were facilitated with the help of a project support staff. The research group tailored their practice intervention based on individual pharmacist's needs and the identified barriers in the workplace. Only one community pharmacist was with the Diabetes Model Practice, other pharmacists had other specialisations. This set-up may be appropriate to address workplace problems uncovered by the implementation of structured counselling, however, this could only be achieved through succeeding research efforts in this area of practice research.

12.4.3.2 Unstructured counselling

Pharmacists were asked to record their NIDDM patient encounters and to document aspects of their counselling. In addition to drug-related information, the 8 pharmacists were able to provide information about other aspects of health care. Of the latter, information on diet, exercise, blood glucose monitoring, footcare, eye care as well as general information on diabetes were provided by the pharmacists. The study on NIDDM counselling by key health professionals (Chapter 9) had indicated the need for pharmacists' support in reinforcing these aspects of care and it was worthwhile to note that trained pharmacists were starting to address this specific concern. In addition, pharmacists also indicated provision of information other than label information; precautions to take, drug interactions and adverse effects were reported to be part of their NIDDM patient counselling. These aspects, together with other health care interventions, were considered important in providing adequate drug information to NIDDM patients (Hamblin 1994; Sutherland 1994).

The use of the tally card was not able to determine, however, the appropriateness of the provided counselling on an individual patient basis. This aspect would have been determined through structured counselling if sufficient number of patients had been recruited for the counselling project.

12.4.3.3 Qualitative improvements

In addition to the quantitative findings regarding pharmacists' acquisition of diabetes knowledge and communication skills, the ethnographic method yielded valuable information regarding the subjective impact of the training program on individual pharmacists. Certain qualities pharmacists claimed to have gained are actually essential in the provision of patient-oriented care. The most important of these qualities was the awareness of the patients' overall health needs as well as the knowledge of the possible interventions which the pharmacists could provide themselves or refer to other health professionals. Ability to empathise and understand the patient's condition has been found to relate to more meaningful interpersonal communication with patients (Chapter 2).

As was experienced by some of the participants, acquisition of knowledge and skills in the care of NIDDM patients improved their personal confidence in their competence, the lack of which was mentioned by Richards and Blank (1997) as hindering the implementation of pharmaceutical care by some U.S. pharmacists. Some participants reported their enthusiasm in imparting more information to patients and also in increasing their input about health interventions other than drug therapy. This could be a manifestation of the relationship between motivation and work performance which was reported by Kanfer (1990). Motivation, though, is just one of many factors which can lead to better work performance.

Other benefits cited by the participants as emanating from their training were increased interest in, and information-seeking about NIDDM and recognition of the patient as an important source of knowledge about NIDDM. Knowing about the disease, not just the drug therapy itself was also found by the community health pharmacist to increase her credibility

as a health professional. Although the exact contribution of these aspects to better counselling performance was not determined in the study, the enhancement of personal attributes important to patient-oriented care was apparent.

In addition to knowledge and skills, there are other factors that either facilitate or hinder the provision of patient counselling. Workplace-, patient- and pharmacist- related factors have already been discussed as affecting pharmacists' counselling (Chapter 3). Some of the factors identified in the context of Tasmanian community pharmacy practice were time, privacy, remuneration and workload (Chapter 6). Results in this study showed that these factors influenced the variability in pharmacists' NIDDM counselling.

Availability of time was considered a deterrent and was closely associated with volume of prescriptions and also with meeting the expectations of the public with regards to efficiency in dispensing medications. As one pharmacist described it, patients equate service with efficient dispensing rather than with the provision of extra services such as counselling. "Time is always a barrier , often you're busy with prescriptions filed up and you feel you'd like to spend more time with a patient but others are waiting and others do not see it as a necessity because they're jumping up and down and want to get their prescription and be away..." (Sassafras, Appendix 10.6). Indeed, studies of public expectations and satisfaction with pharmacy services indicated that some patients were more satisfied with convenience, in terms of distance and shorter waiting time than with cognitive services (Briesacher and Corey 1997; Martin 1994; Meade 1994; Stratton et al. 1993).

In Chapter 6, *remuneration* was found by more owners/managers to be a barrier in their counselling. In the light of this study, it was found that owners/managers were faced with the decision whether to hire an additional pharmacist to enable their assumption of patient-oriented practice. Pharmacists in other positions were not responsible for making such a decision and also hiring of other pharmacists did not relate to any increase of remuneration on their part.

The constant change in workplace characterising *locum position* is a factor reported by pharmacists to affect their establishment of a better therapeutic relationship with patients. Since structured counselling required them to recruit patients, pharmacists found that it was difficult to set appointments in accordance with patients' schedules. The nature of their job had also exposed them to new workplaces which will take time for them to get familiar with.

The requirement for privacy was found to be incompatible with the present *layout* of pharmacies in Hobart. Some pharmacists in the study reported the lack of a semi-private area as preventing them from asking more questions to a patient within the hearing distance of another queuing patient. Similarly, one pharmacist mentioned about patients being hesitant to ask questions as well. Another pharmacist found that the lack of a proper place affected his documentation effort, because of being distracted by other patients in the vicinity. This problem was not observed in pharmacies with a lower volume of prescriptions and where the number of people present at any one time did not hinder greater interaction between the pharmacist and the patient.

Among the participants, the *lack of need for patients to be informed* was seen as preventing them from counselling. However, the study on information needs of NIDDM patients did show that there were existing factors which impinge on patients' willingness to receive additional information from sources other than their general practitioner (Chapter 10). Since pharmacists found that patients' lack of interest was a source of frustration, a better understanding of patient characteristics in general, would be helpful.

A *language barrier* was experienced by some pharmacists as hindering their provision of information beyond what could be easily understood by patients. No immediate solutions to this concern within the professional area is apparent. In as much as health care matters to everyone in the community, there could be community and government institutions to facilitate a solution for this particular concern.

In agreement with the findings of other studies (Chapter 2), the lack of documentation skill prevented most pharmacists from pursuing greater involvement in either structured or unstructured counselling. In spite of the materials in the NIDDM patient counselling kit, pharmacists were not able to adequately document their counselling interventions. Although this may not always be interpreted as poor counselling performance on the part of the pharmacist, this is one weak link in the re-orientation of community pharmacists towards pharmaceutical care, which needs to be addressed.

Overall, there was a positive attitude towards patient counselling among the 10 pharmacists. They all agreed that provision of counselling is an essential component of the practice and at the same time, is beneficial for the patients. Many of the pharmacists emphasised that counselling was indispensable with new rather than repeat prescriptions. This was in agreement with the findings in Chapter 6 that the type of prescription affected the amount of pharmacists' counselling. They reasoned that often, patients with repeat prescriptions refused the offer for counselling and were also presumed by most pharmacists to be knowledgeable about their medications more than those who were newly-diagnosed. This particular perception among pharmacists was supported by a finding in Chapter 10 that among NIDDM patients increased duration of diagnosed diabetes was significantly related to a patients' increase in knowledge of his/her condition. This relationship, however, excluded those who were not accepting of their conditions and, thus, continue to refuse any help.

Derivation of satisfaction from positive feedback through verbal affirmation and observed loyalty of patients was a common characteristic of the participants. The feedback arose from provision of information on medications, advice on health matters and attention given by pharmacists to patients. Less concern was given by pharmacists to negative feedback, which they often found was not directly related to their provision of counselling.

Lastly, suggestions for improving features of the training program were solicited from pharmacists in order to improve similar programs in the future. Although a majority would

like to retain its present features, there were additional components which they would like to include such as: group meetings among participants to discuss potential solutions to identified workplace barriers and the use of real blood for demonstrating the use of blood glucose monitoring devices. The recommendation for longer time allotment for the applied communication training was probably justified considering its limited effect on the communication skills of the pharmacists.

12.4 Conclusion

This study focused on the evaluation of the program and outcomes of the NIDDM Patient Counselling Training Program. Program evaluation showed that the participants were satisfied with the various components of the educational intervention and agreed that it has some bearing on their professional needs. The content of the program, which was comprehensive, had likewise satisfied specific preferences of the participants which otherwise would not have been achieved if a narrow focus had been taken. The variety of learning methods was also appreciated in addition to the multidisciplinary approach taken with regards to the choice of resource persons. The earned satisfaction from its participants justified the use of the CPE system which advocated adherence to adult learning principles, the use of training needs assessment and contextual analysis and the use of a suitable curriculum approach in developing continuing education programs for pharmacists.

Quantitative determination of outcomes showed that there was some increase in learning over a period of 2 months after the training particularly with knowledge of diabetes management and the active listening and responding skills components of interpersonal communication. Nevertheless, the increase in communication skills was still considered insufficient which requires additional educational intervention in the future. Micro-counselling, as a training method, still has potential use in communication training given adequate time allotment.

Pharmacists' counselling performance in the workplace tended to be variable. There were observed efforts from most of the participants to apply their learning in their practice

through the use of the devices included in the NIDDM Patient Counselling Kit but there were not enough interventions with patients to warrant the determination of patient outcomes. Although it was not designed for qualitative assessment, the tally card, as a documentation device, was useful in recording number of counselling encounters and the aspects of diabetes management taken up by a pharmacist with NIDDM patients. The enhancement of pharmacists' documentation skills was considered important for gathering actual information about the level of counselling among community pharmacists.

The use of ethnography further elucidated factors already identified in Chapter 6 as affecting pharmacists' counselling. Statements of pharmacists regarding their individual counselling performances in relation to the training provided some explanation of how the identified factors affect their provision of counselling. Many workplace barriers were acknowledged to hinder counselling which but beyond the limits of educational intervention. Group support systems are expected to help in addressing identified workplace barriers.

CHAPTER 13

General Discussion

13.1 Training Needs Assessment and Contextual Analysis

The purpose of the training needs assessment was to determine the factors affecting pharmacists' counselling performance and at the same time, examine one specific aspect of counselling, that of non-insulin-dependent diabetes mellitus. Since the factors were already identified in the literature, their application to Tasmanian practice context can be determined by quantitative method, that of quantitative survey method. The survey yielded important findings. One is that Tasmanian pharmacists had positive attitudes about patient counselling, particularly with regards to perceived benefits of counselling to patients and pharmacists themselves. The latter has been related with the professional and personal satisfaction pharmacists derived from providing counselling and this was also reported in previous studies (Odedina et al. 1995; Ortiz et al. 1992). It was also found that confidence to perform patient counselling is greater among younger pharmacists which Richards and Blank (1997) also found to exist with U.S. pharmacists. The four factors which tended to increase the amount of pharmacists' patient counselling were: new prescription, patient-asking, drug category and therapeutic classification. On the other hand, repeat prescription was perceived to limit the amount of counselling.

Time, privacy, remuneration and workload were the workplace-related factors affecting the provision of counselling. Some demographic factor like gender, position, length of practice and hours worked per week were found to be related to the aforementioned factors. The recognition of these factors is useful in guiding future practice and educational interventions aimed at improving pharmacists' workplace performance.

In the study of the pharmacists' NIDDM patient counselling (Study 3), it was found that pharmacists vary their counselling according to the nature of the counselling scenario. In comparison with the 'experts', pharmacists tended to give lower priority in providing

information about possible adverse effects of initiation or change of treatment, side effects of a medication and what to do about them and precautions while on medications. This result supported similar findings from other studies (Lam and Krass 1995; Berardo et al. 1989). The study was also able to provide information regarding pharmacists' educational needs, topic preferences and prior learning about diabetes. A majority of pharmacists did not have any training in diabetes and its management and were interested in learning various aspects of diabetes care.

The contextual analysis was able to ascertain important contextual factors from the perspectives of the patient and other health professionals. The review of literature provided in Chapter 3 showed that pharmacists' counselling also depend on the patient-related factors and the practice of other health professionals. The findings of Studies 2,4 and 5 tended to be valuable in determining the medication information-seeking behaviour of patients in general, the specific information needs of a patient group (NIDDM patients) and the patient counselling practices of key health professionals involved in NIDDM therapy and management.

The study on medication information-asking provided information as to how Tasmanians utilise various sources of medication information. The trend on information-seeking was related to gender, age, and employment status. The majority of those who seek expert sources were older women who are pensioners or retired individuals. Lay sources seekers are mostly employed young males. Women have the tendency to be highly active seekers rather than men who, on the other hand, were mostly non-seekers of medication information, regardless of the information source. The information derived from this study suggests that pharmacists should be able to recognise the characteristics of non-seekers and be able to initiate the interaction when necessary.

In Study 4, the counselling practices of other health professionals involved in NIDDM therapy and management were explored. These professionals' respective roles and their activities and projects related to NIDDM counselling were described. The outcomes of, and the feedback they received from patients were also determined from the study. They

provided information about the counselling difficulties they had encountered and the aspects of diabetes management which required greater emphasis in counselling. Such information tended to be important in preparing pharmacists for a greater role in NIDDM patient counselling. The professionals also gave their perceptions of the pharmacists' role in NIDDM patient counselling. It was generally positive and was perceived to be beyond their drug information-giving role. From the interview data and the observations made by the researcher, the information networks among health professionals in Hobart and Launceston were also drawn out.

Study 5 described the health information needs of NIDDM patients. If a pharmacist's counselling is to be relevant, it has to be responsive to the needs of the patients. From the interviews with NIDDM patients, it was found that there was greater knowledge among patients regarding the aspects of diet, use of drugs, blood glucose monitoring and foot care. Patients knew less about hypoglycemia and exercise. General practitioners were generally the major source of information with other health professionals such as pharmacists and podiatrists less utilised as sources of information. Many of the patients procured their knowledge through active interaction with their health care providers and thus confirmed the findings of Schommer and Wiederholt (1994) that patient-asking is a positive factor in patient counselling. A significant pattern of relationships existed among the variables included in the survey which could explain patients' willingness to seek diabetes information from various sources. This latter finding will be useful in targeting individuals who might need more counselling than others.

13.2 Educational Intervention

The training program utilised the findings of the training needs assessment and contextual analysis in conjunction with the key elements of the CPE system. The program developed has the following attributes:

- addressed identified contextual needs of NIDDM patients, pharmacists and other health professionals;
- was disease-oriented and multi-disciplinary in approach;
- integrated knowledge with the skills component;

- offered a variety of modes and settings as well as methods of evaluation;
- the design and methods of learning were within the limits of resources available to providers and learners and
- emphasis on program and outcomes evaluation.

13.3 Program and Outcomes Evaluation

There was a highly positive result with regards to the program evaluation. The majority of the pharmacists were satisfied with the aspects of the training program and had commended its disease-oriented, multi-disciplinary approach, the integration of knowledge and skills components, the variety of learning methods and materials used as well as the choice of resource persons. The aspects of the program liked best by the participants varied as well as the aspects of the program which they found useful to their counselling practice.

The workplace evaluation was divided into three kinds: structured counselling, unstructured counselling and qualitative improvements. The involvement of pharmacists in structured counselling and their minimal degree of utilisation of the NIDDM patient counselling kit did not warrant the evaluation of patient outcomes. The evaluation of their unstructured counselling, however, had shown that pharmacists did improve in the amount and the kind of information they provide to NIDDM patients during a segment of the evaluation period. The observed variability in pharmacists' counselling performances were explained in their audio-taped interviews. Through this method, pharmacists were able to explain the barriers that prevented them from using the NIDDM patient counselling kit as well as other aspects of their counselling such as their preference for giving more counselling to those patients with new prescriptions rather than those with repeat prescriptions. This particular result, together with the barriers identified, also explains the findings in Study 1. Some of the factors identified may not be addressed by educational intervention but would require the involvement of professional organisations and other sectors who are also involved in the provision of health care to NIDDM patients.

CHAPTER 14

Overall Conclusion and Recommendations

14.1 Overall Conclusion

The review of literature on the (1) social aspects of health care, concepts of health care and drug use problems and pharmaceutical care, (2) pharmacists' patient counselling and (3) research methodologies, as well as their implications on the practice and continuing education of community pharmacists, directed the formulation of the research framework. The research methodology adopted in this work utilised both quantitative and qualitative research methods using a set of criteria for determining their appropriateness.

The choice of research components, from training needs assessment and contextual analysis (Stage 1) to evaluation of the educational intervention (Stage 3), has been useful in developing a more relevant training program, the outcomes of which could be measured in workplace performance outcomes. The general studies on patient counselling, Studies 1 and 2, were useful in generating an overview of the phenomenon from both the pharmacists' and patients' perspectives. Studies on specific counselling, from the perspectives of the non-insulin dependent diabetes mellitus (NIDDM) patients, pharmacists and key health professionals, created a holistic yet contextual approach to the development of the educational intervention.

The "Training Program on NIDDM Patient Counselling for Community Pharmacists" was developed based on the findings of the studies in Stage 1 and in accordance with the CPE system developed by the author in a previous work. It had conformed to the principles of adult learning in which a variety of learning methods was used and in which the content of learning was derived from the issues that were relevant to the counselling practice of community pharmacists. The training needs assessment and contextual analysis provided a contextual picture of the issues involved in the counselling of NIDDM patients in Tasmania, the inclusion of which makes the program not only

relevant to the knowledge and skills needs of the pharmacists but also those of the patients and other health professionals involved in diabetes therapy and management. Although participants were highly satisfied with the program, there was feedback for improving some of the aspects of the program, particularly the conduct of the applied communication skills component.

The extension of evaluation to the workplace practice of the training program participants not only provides measures of the application of learning but also identifies and provides explanations regarding the variability of counselling behaviours among the community pharmacists involved. Of the identified factors, there is only one which could be addressed by further training and that is documentation skills. Several factors described by the study participants are workplace- and patient-related and can be addressed in different ways by different sectors involved in the provision of health care.

The research objectives of this work were reasonably achieved, particularly through the use of appropriate research methods. The utilisation of qualitative methods, particularly ethnography, helped in handling issues in patient counselling which, otherwise were not possible through the use of quantitative research methods alone. The qualitative and the quantitative methods complement each other in certain studies and support their use in patient counselling research provided that a researcher is guided by a set of criteria for appropriateness. The training program developed according to the CPE system has confirmed that continuing education programs can be relevant to the actual practice of pharmacists provided that (1) training needs and contextual analysis be conducted prior to the development of any educational intervention and (2) a curriculum which renders itself compatible to workplace evaluation is in place. However, it has to be acknowledged that the application of learning does vary from pharmacist to pharmacist depending on their individual objectives in learning and also, specific workplace situations. The elucidation of factors responsible for the observed variation in the counselling performances of pharmacists required the employment of qualitative research methods.

14.2 Recommendations

14.2.1 Patient counselling research

Patient counselling is a complex, multifaceted form of communication which requires an appreciation of its basic contexts: intrapersonal, interpersonal and socio-cultural contexts. As such, it is recommended that

- research in patient counselling be approached by a researcher with an understanding of the specific context, be it from the pharmacist, patient or other stakeholders' perspectives;
- qualitative research methods be utilised, most probably triangulating with other methods, for those aspects of research which require a deeper understanding and which are beyond the explanatory power of quantitative research methods and
- on the basis of the ongoing transition towards patient-oriented care, research that addresses the barriers encountered by pharmacists in the community be pursued as it would be most appropriate and indispensable in helping bridge the gap between ideal and actual pharmacy practice.

14.2.2 Continuing education in pharmacy

The development and implementation of the training program is the practice intervention arm of this research. The relative merits of the training program in influencing pharmacists' counselling practices were achieved through a combination of planning, implementation and evaluation strategies. In this regard, the following recommendations may be useful, not only for future continuing education of pharmacists in Tasmania, but also for other pharmacists in other places provided that contextual differences are taken into consideration.

It is also expected that, with the findings of the present work, some of the problems discussed in the literature were addressed and that a greater understanding of the factors affecting the counselling performances of community pharmacists will eventually be

achieved. This work could be pursued further up to the level of patient outcomes once certain contextual factors were addressed, particularly those of the workplace.

It is, therefore, recommended that:

- training needs assessment be conducted as part of continuing education for pharmacists and that findings emanating from this aspect be utilised in deciding the format and content of learning;
- an analysis of the contexts in which a particular aspect of practice occurs could be used in determining availability or limitations of resources for learning and, therefore, adjustments could be made during the planning stage of a program;
- a disease-oriented, multi-disciplinary approach be taken for chronic diseases which require regular and consistent health care intervention from pharmacists and other health professionals;
- the amount of time required for micro-counselling, as a training method to enhance pharmacists' communication skills, should be modified according to the time required for acquiring basic communication skills
- documentation skills of community pharmacists in Tasmania be enhanced in future CPE programs and
- evaluation of workplace outcomes be made a regular part of the development of any continuing education in order to justify contribution of educational interventions in enhancing change in pharmacy practice.

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APPENDICES

APPENDIX 1

Questionnaires

1.1 Questionnaire 1,
Factors affecting pharmacists' patient counselling (Q_1)

1.2 Questionnaire 2,
Medication information-seeking behaviour among Tasmanians (Q_2)

1.3 Questionnaire 3,
A survey of NIDDM counselling by community pharmacists (Q_3)

1.4 Questionnaire 4,
Status of NIDDM patient counselling by key health professionals (Q_4)

1.5 Questionnaire 5,
Information and resource needs of NIDDM patients in Tasmania (Q_5)

1.6 Participant information form

1.7 Overall program evaluation form

Questionnaire

PART 1

Please provide answers to the requested information below.

Practice Setting

Community ☐ Institutional (eg hospital) ☐ Other_____

POSITION (Community Practice)

Owner and/or manager ☐
Pharmacist-in-charge ☐
Pharmacist ☐
Locum ☐

POSITION (Institutional Practice)

Chief pharmacist ☐
Deputy chief ☐
Staff pharmacist ☐

Workplace Location

Major city (eg Hobart, Launceston) ☐
Rural major (eg Devonport) ☐
Rural other (eg Scottsdale) ☐
Remote (eg King Island) ☐

Gender

Male ☐
Female ☐

Phone Area Code (eg 002) _____ **Years** in Practice _____

Average Working Hours in Pharmacy Practice Per Wk _____

Professional Organisation Membership/s _____

PART 2: To be answered by **all** pharmacists.

Please place a tick (√) in the most appropriate box.

Counselling Statements	Strongly Disagree	Disagree	Not Certain	Agree	Strongly Agree
1. All patients with a prescription should receive the same amount of counselling	☐	☐	☐	☐	☐
2. Medications are more likely to be taken when patients are counselled	☐	☐	☐	☐	☐
3. People don't really respect the advice of the pharmacist	☐	☐	☐	☐	☐
4. Counselling reduces drug wastage	☐	☐	☐	☐	☐
5. Counselling improves pharmacist-patient relationship	☐	☐	☐	☐	☐
6. Counselling is not my responsibility but should be done by the doctor	☐	☐	☐	☐	☐
7. I don't know enough about drugs and their effects to do counselling	☐	☐	☐	☐	☐
8. Written information should be given in addition to verbal counselling	☐	☐	☐	☐	☐
9. Knowing more about the patient is necessary for effective counselling	☐	☐	☐	☐	☐

Counselling Statements	Strongly Disagree	Disagree	Not Certain	Agree	Strongly Agree
10. Counselling may prevent the patient from experiencing an adverse drug effect	☐	☐	☐	☐	☐
11. Customers don't perceive the benefits of counselling	☐	☐	☐	☐	☐
12. Counselling brings more people into the pharmacy	☐	☐	☐	☐	☐
13. Counselling enables me to become an active member of the health team	☐	☐	☐	☐	☐
14. Counselling increases professional responsibility beyond which I am prepared to accept	☐	☐	☐	☐	☐
15. I am not confident of my communication skills	☐	☐	☐	☐	☐
16. I prefer to give written than verbal counselling	☐	☐	☐	☐	☐
17. Counselling should be offered even when the patient does not ask for it	☐	☐	☐	☐	☐
18. Appropriate counselling boosts patient compliance	☐	☐	☐	☐	☐
19. Customers appreciate the extra care and interest shown to them	☐	☐	☐	☐	☐
20. Counselling enhances professional status	☐	☐	☐	☐	☐
21. Counselling improves pharmacist-physician relationship	☐	☐	☐	☐	☐
22. I am a respected member of the community and people expect me to give advice	☐	☐	☐	☐	☐
23. I have confidence in my knowledge to be able to do counselling well	☐	☐	☐	☐	☐
24. It is easier to give just verbal counselling	☐	☐	☐	☐	☐
25. Some patients require more counselling than the others	☐	☐	☐	☐	☐
26. Counselling does not lead to significant improvement in health care	☐	☐	☐	☐	☐
27. There is a lack of feedback from the public regarding counselling	☐	☐	☐	☐	☐
28. Sometimes patients should be asked personal questions in relation to their medications	☐	☐	☐	☐	☐
29. Counselling increases job satisfaction	☐	☐	☐	☐	☐
30. I am worried about contradicting doctors	☐	☐	☐	☐	☐

PART 3: To be answered **only** by pharmacists who work full- or part-time in a community pharmacy.

Counselling Statements	Strongly Disagree	Disagree	Not Certain	Agree	Strongly Agree
1. Without asking, I can sense what information my clients/patients need	☐	☐	☐	☐	☐
2. Persons who are either illiterate or mentally handicapped cannot cope with more counselling than knowing the label instructions	☐	☐	☐	☐	☐
3. I wish customers with prescription would ask me more about their medications or medical conditions	☐	☐	☐	☐	☐
4. Clients with new prescriptions may require more counselling than those with repeat prescriptions	☐	☐	☐	☐	☐
5. Patients should know that some drugs have greater potential risks than the others	☐	☐	☐	☐	☐
6. I would have better opportunity for counselling if more prescription drugs were converted to OTC classification	☐	☐	☐	☐	☐
7. I don't think anyone should receive verbal counselling other than the patient him/herself	☐	☐	☐	☐	☐
8. I need information from a client/patient before giving verbal counselling	☐	☐	☐	☐	☐
9. I don't initiate verbal counselling when the patient appears to be knowledgeable about his/her medication/s	☐	☐	☐	☐	☐
10. I counsel more when customers ask about their medications or medical conditions	☐	☐	☐	☐	☐
11. I provide the same amount of counselling to customers with either new or repeat prescriptions	☐	☐	☐	☐	☐
12. Some of the prescription medications do not really require more explanation what is written on the label	☐	☐	☐	☐	☐
13. I do more counselling with OTC than prescription medications	☐	☐	☐	☐	☐
14. I give the same amount of counselling to a carer as I would the patient	☐	☐	☐	☐	☐
15. I find it difficult to counsel those who have physical or medical handicaps	☐	☐	☐	☐	☐
16. People who are taking drugs for chronic conditions know more about their medications	☐	☐	☐	☐	☐

Counselling Statements	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
17. I provide more counselling for certain drug categories	☐	☐	☐	☐	☐
18. To give counselling to a patient/client with a repeat prescription is extra work	☐	☐	☐	☐	☐
19. I could provide counselling than I am currently capable of if I had more time	☐	☐	☐	☐	☐
20. Remuneration is a good incentive for counselling	☐	☐	☐	☐	☐
21. Patient counselling requires privacy	☐	☐	☐	☐	☐
22. Hiring of additional personnel will enable me to do more counselling	☐	☐	☐	☐	☐
23. I am available for counselling most of the time	☐	☐	☐	☐	☐
24. I don't mind whether I get paid for counselling or not	☐	☐	☐	☐	☐
25. The quality of counselling is not really affected by the lack of privacy	☐	☐	☐	☐	☐
26. Patient counselling does not require a great deal of resources	☐	☐	☐	☐	☐
27. I could provide more counselling if there were fewer patients/clients	☐	☐	☐	☐	☐
28. My level of counselling would increase if I was paid for it	☐	☐	☐	☐	☐
29. I need to have a private area in the pharmacy so I could provide adequate counselling	☐	☐	☐	☐	☐
30. Written materials for counselling cost a lot	☐	☐	☐	☐	☐
31. My being busy is not at all related to my provision of counselling	☐	☐	☐	☐	☐
32. I am usually distracted by other things when counselling in the pharmacy	☐	☐	☐	☐	☐
33. I always make available to the patients written materials like the Self-care leaflets	☐	☐	☐	☐	☐
34. The more prescriptions there are, the harder it is to find time for counselling	☐	☐	☐	☐	☐
35. I can provide adequate counselling where I am practicing now	☐	☐	☐	☐	☐

Q_2. Questions included in the telephone survey called Tasmania's Future Survey

Table 7.1 Questions on clients' sources of information on medications

Question Number	Question Wording
	Do you usually seek information about your medications from:
21a	• a doctor?
21b	• a pharmacist or chemist?
21c	• books or other reference materials?
21d	• your family and/or friends?

UNIVERSITY OF TASMANIA

Tasmanian School of Pharmacy

A Survey on Community Pharmacists' Non-Insulin Dependent Diabetes Mellitus (NIDDM) Patient Counselling

1996

14 August 1996

Dear Colleague,

We would appreciate your support in completing the questionnaire provided. This survey is part of the second phase of our research on patient medication counselling. In this survey, we have focused on the counselling of non-insulin diabetes mellitus (NIDDM) patients who, according to reliable sources, constitute 85% of about 350,000 diagnosed diabetic patients in Australia and whose healthcare costs the government $ 1 billion annually. As many of these patients rely on the use of prescription medications (sulfonylureas and metformin), pharmacists have a great opportunity to extend their counselling service to help these patients manage their medical conditions effectively.

The objectives of this survey are to:

- determine which elements of counselling are appropriate for common counselling scenarios encountered in the community pharmacy;
- identify the aspects of NIDDM, its drug therapy, management and patient advice which pharmacists consider as necessary components of a NIDDM training program for community practice and
- find out whether the identified training needs are related to some socio-demographic characteristics.

This research work has been approved by the Pharmacy Practice Research Committee which comprises the branch representatives of the Pharmacy Guild of Australia, Pharmacy Board of Tasmania, Pharmaceutical Society of Australia and Society of Hospital Pharmacists of Australia. It has also received approval from the University Ethics Committee and complies with the law of the State. If you have any query about the nature of the questionnaire, please contact me on (002) 202196. For any concerns about the ethical nature or conduct of the project, you may contact Chris Hooper, Executive Officer of the University Ethics Committee (Human Experimentation), at (002) 202763.

Thank you for your cooperation and we would appreciate it very much if you can send the completed questionnaire as soon as possible. We are hoping to develop a NIDDM Training Program based on relevant research findings. If you would be interested in receiving information about the program and possibly participating if it comes about, please fill in the enclosed form and return it separately from the questionnaire.

Yours sincerely,

Roger Rumble

Dr Roger Rumble
Chief Investigator

QUESTIONNAIRE

Part 1 Counselling Scenarios

Instruction: Read the given scenarios carefully and determine which elements of counselling you would consider important in counselling the non-insulin dependent diabetes mellitus (NIDDM) patient in each case. You may rank elements of counselling accordingly (opposite page).

1. Mr Bluett

- **repeat prescription**
- **familiar with the prescription**
- **pensioner/concessioner previously stabilised on Daonil**
- **wants a cheaper brand**

Mr Bluett, 65 y/o, is a pensioner/concessioner who has been your regular customer for Daonil, 5 mg tablets. He seemed to have stabilised with his medication for 2 years but for some personal reasons, he came to your pharmacy for a repeat prescription and asked for your advice regarding other cheaper brands which he could have instead of Daonil. Your pharmacy has stocks of other generic brands of glibenclamide. Since substitution is possible, what sort of information would you consider in his case?

2. Ms Clark

- **new prescription for sulfonylurea**
- **would like home glucose monitoring device**
- **pharmacists are busy**
- **several customers for non-prescription items**

It is a busy time for your pharmacy, with several customers wanting different non-prescription items. Together with one assistant, you are in charge of handling the dispensing of prescriptions. There are five people on the queue, all with prescriptions. The first person who handed you her prescription is Ms Clark, 52 y/o, a new NIDDM patient who was prescribed Melizide, 5 mg to be taken twice a day. She is also interested in having a home glucose monitoring device. Given limited time, what will your counselling be?

Elements of Counselling

Instruction: For each of the scenarios provided, please rank each element below from 0 up to 2, according to its importance to the particular scenario. A rank of 0 = Unimportant or Minimally Important, 1=Important (Desirable) and 2 = Very Important (Essential).

Element	Scenario 1	Scenario 2
• name and purpose of medication	_____	_____
• dosage and frequency of intake (eg 1 tablet twice daily)	_____	_____
• duration of drug treatment	_____	_____
• directions for use	_____	_____
• administrative (price, generic availability, repeats)	_____	_____
• side effects of medication and what to do with them	_____	_____
• possible adverse effects of initiation/change of treatment and what to do with them	_____	_____
• interactions with other medications and food such as ß-blockers, corticosteroids, thiazide diuretics, cimetidine	_____	_____
• contra-indications/ hypersensitivities	_____	_____
• precautions to take while on medication	_____	_____
• adherence to diet plan	_____	_____
• need for regular exercise	_____	_____
• regular blood glucose monitoring	_____	_____
• check on compliance problem	_____	_____
• monitoring and actions to take for symptoms of adverse effects such as hypoglycemia	_____	_____

Please describe other aspects of counselling which you think will be necessary for each scenario but are not included in the above list.

Part 2: Training Needs Assessment

1. Are there specific issues about NIDDM, its drug therapy, management and patient advice which you particularly need to know more?

---

2. Should a training program for pharmacists on NIDDM patient counselling involve resource persons from various health professions? If yes, which of the following health professionals do you think should be involved? Please tick your choices.

endocrinologist	[ ]	diabetes educator	[ ]
pharmacist	[ ]	physical therapist	[ ]
general practitioner	[ ]	nutritionist/dietitian	[ ]
nurse	[ ]	psychiatrist/psychologist	[ ]
ophthalmologist	[ ]	podiatrist	[ ]

Other, please specify _____

3. Which diabetes-specific training programs have you attended in the past?

---

4. If a free training program for NIDDM counselling was available later this year, would you like to be informed? If so, please complete the reply slip provided at the end of this survey form and post separately from the survey form to the address given.

Part 3 Demographic Characteristics

Instruction: Please tick (√) as applicable.

GENDER

Male ☐

Female ☐

POSITION

Owner and/or manager ☐

Pharmacist-in-charge ☐

Pharmacist ☐

Locum ☐

GEOGRAPHIC LOCATION

Major cities (eg Hobart, Launceston) ☐

Rural major (eg Devonport) ☐

Rural other (eg Scottsdale) ☐

Remote (eg King Island) ☐

Postcode (Work place) _____

Years in Practice _____

Average Working Hours in
Pharmacy Practice Per Week _____

THANK YOU FOR YOUR COOPERATION

Scope of Interview for NIDDM Counselling Providers

I. Introduction

This structured interview is conducted as part of a study on *non-insulin dependent diabetes mellitus patient counselling* by Yolanda Robles, PhD student at the Tasmanian School of Pharmacy.

Patient counselling, as a means of educating patients on the management and treatment of their health conditions, has always been perceived to benefit patients in several ways. One of these ways is compliance. For a diabetic patient, this means being able to follow diet plans, perform regular exercise, comply with drug regimen, monitor blood glucose, care for body parts and have regular check-ups in order to keep diabetes under control.

The task of NIDDM patient counselling is multidisciplinary and yet the scope of counselling varies in each health profession. However, these professions provide specific contribution to the goal of empowering patients to make informed decisions regarding his/her health.

It is the purpose of this interview to get a glimpse of NIDDM patient counselling by different health professions in Tasmania and to find out how a community pharmacist could help either by reinforcing some aspects of counselling or by improving his/her role in the healthcare provider referral system.

II. Basic Interview Questions

Note: Interviewees' names will be held confidential and will not appear on any documentation emanating from the interviews. However, they will be included in the acknowledgement section of the final thesis.

1. What is the role of your profession in NIDDM counselling?

2. What are the activities/projects of your institution or yourself regarding NIDDM counselling?

3. What are the expected outcomes of the services you are providing?

4. Are you getting feedback from the recipients of your services?

5. Have you encountered difficulties in counselling such as those involving the process, the patient or the outcome of service?

6. Are there areas of counselling (eg footcare) which NIDDM patients need to be very aware of, which has to be emphasised by counsellors, which cannot be currently dealt with in the services offered in your institution or by you?

7. What other professions do you think should be involved in NIDDM counselling and their specific roles?

8. In what ways could the pharmacist be of help?

Questionnaire on the Information and Resource Needs of NIDDM Patients

I. Personal Information

Age	_____	Ethnic Group	_____
Gender	_____	Town/Suburb of Residence	_____
Year NIDDM Diagnosed	_____	Reason for Admittance	_____

II. Information and Resource Needs

1. What aspects of diabetes do you think you should know?

(Note: This is an open-ended question and the following aspects of information are for interviewer's guide only)

Nothing	_____
Nature of diabetes	_____
Symptoms and complications of diabetes	_____
Proper diet	_____
Food preparation	_____
Proper use of drugs	_____
Adverse effects of drugs	_____
What to do during sick days	_____
Exercise methods	_____
Footcare	_____
Coping mechanisms	_____
Blood glucose monitoring	_____
Blood pressure monitoring	_____
Proper use of insulin syringe	_____
Other _____	_____
Other _____	_____
Other _____	_____

2. a. To whom or where do you go when you want information about your diabetes?
b. How frequent do you avail of the specific information from the sources you mentioned (**rarely**-once or twice during duration of diabetes; **seldom**-more than twice during duration of diabetes; **regularly**-one or more annually; **frequently**-regularly + when necessary)

(Note: This is an open-ended question and the following aspects of information are for interviewer's guide only)

No one	_____	Social Worker	_____
General Practitioner	_____	Diabetes Australia	_____
Nurse	_____	Library	_____
Diabetes Educator	_____	Written References	_____
Nutritionist/Dietitian	_____	Family Members or Friends	_____
Podiatrist	_____	Other _____	_____
Pharmacist	_____	Other _____	_____

3. a. During the course of your diabetes, have you received any information about diabetes from any of the following without having to ask for it?
b. How much information did you receive? (**least**- 1 to 2 aspects of information; **less**- 3 to 5; **enough** - 6 to 8; **lots** - more than 8)

General Practitioner	_____	Podiatrist	_____
Nurse	_____	Pharmacist	_____
Diabetes Educator	_____	Social Worker	_____
Nutritionist/Dietitian	_____	Family Members or Friends	_____

4. a. Are you satisfied with the knowledge you have about diabetes? Yes or No
b. Would you be willing to receive additional information if offered? Yes or No

If yes to 4b, go to Question 5.

If no to 4b, give reason/s why.

_____

_____

_____

_____

_____

_____

5. In what form would you like information to be given to you? Why?

Verbal advice	_____
Written Information	_____
Combination	_____
Video/Audio tapes	_____
Other _____	_____
Other _____	_____

yrr/5-8-96

NIDDM Patient Counselling Training Program for Community Pharmacists

Participant Information

Participant Number 1

Age_____ Gender Male/Female

Name of Pharmacy_____

Length of Pharmacy Practice (in years)_____

Job Position:
- Owner/Manager ☐
- Pharmacist-in-charge ☐
- Pharmacist ☐
- Locum ☐

Average Working Hours per Week_____

OTHER INFORMATION

1. Have you previously attended any training program about diabetes other than the recent program we have offered? Yes/No

If yes, please describe the learning method used in the program

_____

_____

_____

2. Have you previously attended any training program about patient counselling other than the recent program we have offered? Yes/No

If yes, please describe the learning method used in the program

_____

_____

_____

2. Please tick (√) any of the following learning methods and materials which you have been exposed to (in any study area) before you joined the NIDDM patient counselling program we have offered?

Lecture	☐	Role-Playing	☐
Demonstration	☐	Written Case Study	☐
Workshop	☐	Microskills Videotaping	☐
Learning Modules	☐	Videotaped Scenario	☐
Written Hand-outs	☐	Audio-taped Lecture	☐

Other (not in this list)_____

OVERALL TRAINING PROGRAM EVALUATION

NIDDM Patient Counselling Training Program
for Community Pharmacist

OVERALL TRAINING PROGRAM EVALUATION

INSTRUCTIONS: Take a few minutes to think about the entire program and then give us your opinion on the following aspects. This information will be very helpful to us in planning future training programs.

1. General Evaluation (Please tick (√) appropriate box)

Objectives of the Program	Very Successful	Successful	Limited Success	Failed
A. To enhance your knowledge and understanding of • NIDDM Diagnosis and Pathophysiology				
• Drug Therapy				
• Various Aspects of Diabetes Management				
B. To increase your skill as helper-communicator				

If you wish to explain your ratings, please do so.

_____

_____

_____

_____

2. What was your overall reaction to this training program?

Excellent
Better than expected
Satisfactory
Poor

3. Did you feel that the program met your needs as a community pharmacist?
Yes/No/Uncertain

4. Would you like to see this type of program for other chronic illnesses?
Yes/No/Uncertain

5. Resource Persons Evaluation

A. Morning Sessions (Eg endocrinologist, nutritionist, podiatrist, etc)

Aspects	Very Good	Good	Fair	Poor
Knowledge of subject matter				
Organisation & preparation				
Style & delivery				
Responsiveness to participants				
Creating appropriate learning climate				

A. Afternoon Sessions (Communication skills trainers)

Aspects	Very Good	Good	Fair	Poor
Knowledge of subject matter				
Organisation & preparation				
Style & delivery				
Responsiveness to participants				
Creating appropriate learning climate				

6. Method of Presentation

6a. Do you think there were too many resource persons involved in this program?
Just right/Too few/Too many

6b. How do you rate the balance of lectures, group discussions and sessions?
Too much lecture/Too much discussion/Too many exercises/ Good balance

6c. How do you rate the methods used in the program?

Method Used	Excellent	Very Good	Good	Poor
Resource speakers from several disciplines				
Videotaping in Communication Skills Sessions				
Audio-visual aids in A.M./P.M. Sessions				
Written Hand-outs and other Materials				

7. Program Content

7a. What did you like best about the program?

7b. What aspect of the program would require improvement?

7c. Which part of the program is most useful to your job?

8. Overall Comment about the Training Program

Note: You may write any objective comments about the program which has not been covered in the preceding evaluation. Thank you very much for your co-operation.

APPENDIX 2

Statistical Analysis

2.1 Study 1: Reliability analysis

2.2 Study 7: Ratings of participants' videotaped counselling

Counselling Attitude (Role Orientation)

Item Grouping	Item No.	Item-total Correlation*	Alpha*
1. Pharmacists' patient counselling as subjective and patient-oriented	2.1	-0.0889	
	2.9	.0957	
	2.17	.0902	
	2.25	.2302	
	2.28	.0432	
			.1841
2. Patient counselling has many benefits			
	2.2	**.4152**	
	2.10	**.2287**	
• Patient counselling is beneficial to patients	2.18	**.6134**	
	2.26	**.4509**	
• Patients derive satisfaction from pharmacist's counselling	2.3	**.2767**	
	2.11	**.2895**	
	2.19	**.4807**	
	2.27	**.3213**	
• Pharmacists gain personal and professional benefits from patient counselling	2.4	**.4074**	
	2.12	**.5234**	
	2.20	**.4939**	
	2.29	**.4518**	
• Pharmacists' relationship with other health professionals is enhanced by patient counselling	2.5	.4307	
	2.13	**.4400**	
	2.21	**.5173**	
	2.30	**.2761**	.7913
3. Patient counselling is a pharmacist's accountability	2.6	**.4980**	
	2.14	**.3454**	
• Patient counselling is a responsibility	2.22	**.3739**	
• Patient counselling requires pharmacist's capability	2.7	**.5449**	
	2.15	**.3554**	
	2.23	**.5755**	
			.6944
8. Pharmacists look at PMC as providing both forms of counselling (written or verbal)	2.8	.0554	
	2.16	-.1942	
	2.24	.0317	
			-.0786

* Highlighted values denote moderate to high correlation

Barriers and Facilitators of Counselling (Community Pharmacy)

Known Barriers and Facilitators	Item No	Item-total Correlation*	Alpha*
• Time			
	3.19	**.4438**	
	3.23	**.2621**	
	3.31	**.4631**	
	3.27	**.5295**	
	3.34	**.4506**	
			.6699
• Remuneration			
	3.20	**.5376**	
	3.24	**.5486**	
	3.28	**.5650**	
			.7282
• Privacy			
	3.21	**.5086**	
	3.25	**.4967**	
	3.29	**.5583**	
	3.32	**.2649**	
			.6658
• Workload			
	3.35	**.3646**	
	3.22	**.3646**	
	3.27		
	3.34		
			.5332
• Resources			
	3.26	.0742	
	3.30	-.1044	
	3.33	-.0151	
			-.0410

* Highlighted values denote moderate to high correlation

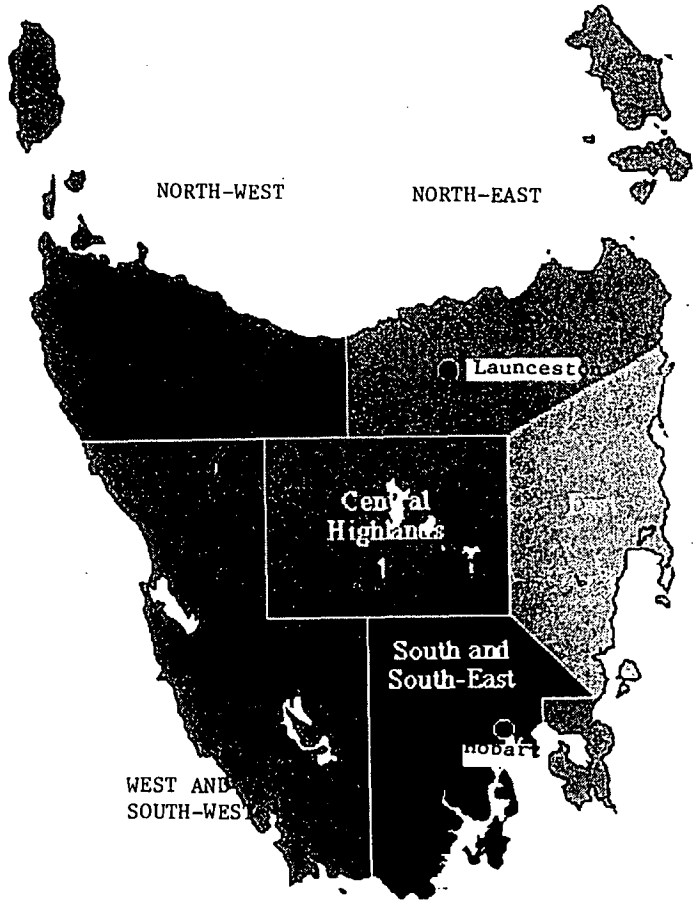
APPENDIX 2.2
Ratings of Participants' Videotaped Counselling Skiils

Participant's Code Name	Pre-intervention Score*				Post-intervention Score*			
	Attending	Responding	Inter-viewing	Influencing	Attending	Responding	Inter-viewing	Influencing
Waratah	7.9	7.75	8.25	8.5	8.0	7.5	8.3	8.9
Myrtle	8.8	8.0	9.0	7.8	7.8	7.5	8.5	7.8
Boronia	9.7	8.8	9.4	9.8	8.8	8.0	9.3	9.4
Correa***	5.5	3.0	3.8	4.3				
Heath**								
Sassafras	9.0	9.4	7.8	6.8	9.5	9.75	8.5	8.8
Scoparia	7.0	5.5	5.0	4.5	6.0	3.5	4.5	5.0
Iris					8.5	7.8	7.5	6.5
Hibertia	6.2	5.5	7.5	8.5	7.2	5.5	8.5	8.4
Wattle***					9.0	7.0	9.4	9.7

*On a perfect score of 10 and based on average score given by the two raters
** She was only able to role play as a patient due to time constraint
*** They were only able to attend two out of three applied communication skills sessions

APPENDIX 3

Map of Tasmania



A Qualitative Study of NIDDM Counselling in Tasmania (1996)

Appendix 3

APPENDIX 4

Interview Summary

4.1 Study 4: Q_4 Interview summary

Summary of Semi-structured Interviews with Key Health Professionals involved in NIDDM Counselling in Tasmania (1996)

Professional/Role	Activities/Projects	Outcomes/Feedback of Services	Counselling Difficulties	Areas requiring emphasis in counselling practice	Perception of Pharmacist's Role in NIDDM counselling*
1. **General Practitioner** • overall healthcare coordinator with variable involvement in NIDDM patient education (eg diagnosis, disease management by the patient, prevention of complications) • referral point for other specific health services (eg podiatry, ophthalmology, endocrinology) • principal primary health care provider	*Community Health Centre* • general health education • provision of book re: diabetes, medications, lifestyle and nutrition • other written materials on diabetes • reminder record system re: patients' regular visits and annual education program • one-on-one counselling *Private Practice* • counselling on lifestyle modification (eg diet, exercise, weight reduction, reduction of risk factors for CV disease • education re: home monitoring of urine and blood glucose • quarterly examination and assessment of control • annual thorough examination for end organ disease	*Community Health Centre* • Improved patient's knowledge, attitude and behaviour re: diabetes and aspects of its management which can be checked through a diabetes flowsheet (no. of visits, medical, physical examination and referral to other health professionals) *Private Practice* • Improved compliance and control • reduced complications FEEDBACK • verbal appreciation of services (book, visit reminder) • patient satisfaction survey (RACGP)	• Motivational drift in both patients and GPs (patient-how to sustain interest in lifestyle change, GP- how to keep motivated to follow-up patients • Poor understanding of concepts • Poor compliance (eg diet)	• proper use of insulin delivery systems • dietary counselling and cooking • proper use of glucose monitoring devices • hypoglycemia • what to do and what to take during sick days • reinforcement re: diet, exercise and footcare	• drug information including drug interactions for those in multiple therapy • proper use of insulin delivery systems and glucose monitoring devices • referral to the GP re: need for other health services and advice re: problems w/ renal impairment • improve communication with the GP

2. Podiatrist • HP which focuses on problems of the feet and the lower limbs and an area of interest is diabetes care . • depth of counselling in diabetes care is variable - deeper for those who are in this area of interest • content of counselling varies from general advice such as hygiene and palliative care to the physiological aspect of the problem	• annual vascular and neurological assessment for diabetics under their care (in accordance with the National Action Plan for Diabetes with the endorsement of the Australian Podiatry Council	When counselling is individualised and is based on thorough vascular and neurological assessment, it is expected that patients • will have better understanding of their condition and • capable of complying with activities like footcare and blood glucose monitoring • Verbal answers to questions asked during follow-up visits • For group education sessions, evaluation is by questionnaires	• patients' beliefs re: NIDDM, body systems w/c lead to withholding of information • language proficiency and academic level • religion and culture • limitation of information from patient	• general footcare • blood control • use of medications • the need for vascular and neurological assessment	• More information about anti-diabetic medications • help patients understand that NIDDM is real diabetes and that they are also prone to develop same complications as IDDMs • reinforce the need for vascular and neurological assessment important in diabetes control
3.Nutritionist/Dietitian • Dietitians help people understand how nutrition plays a part in the health of NIDDMs and how to make lifestyle changes beneficial to their health	• perform one-to-one counselling of clients either referred by GPs and other health professionals and those who look up yellow pages and wanting some dietary advice. • report of referred cases to GP and inform them of issues which may affect compliance	• improved knowledge of dietary principles • better glycemic control • improved eating habits Assessment is done through food history in which the patient is asked to recall his/her dietary intake on a 24-hour basis, done during subsequent 3-4 visits. Verbal feedback is only obtained from those who have follow-up visits	• non-compliance to some extent • cost to the client since this service is more accessible to those who have private health cover • location of the office which is not suitable to disabled clients • few dietitians in Tasmania (around 25) and therefore there is a willingness among us to have other health professionals to share in educating NIDDM clients on nutrition	• knowledge whether client has regular blood glucose monitoring since urine testing is not that reliable • client should be asked whether they had met with a diabetes educator to have better knowledge about their health condition and other lifestyle issues	• they can promote diet principles • emphasise on the proper time of medication intake, in relation to meals • as part of the referral system, they could also pick up aspects of the patient's condition which will require help from other health professionals

4. Diabetes Educator • The work involves teaching people about their illness and how to be self-sufficient in the management of their conditions • supportive and preventative measures • family counselling *Diabetes Centre* • educate people with diabetes, their families and friends about diabetes and its management • educational follow-ups, offer of support and reassurance to inpatients • provide education to schools, hospital staff and students	*Institutional* • group diabetes education for newly-diagnosed NIDDMs (3 days/2 mos) • community diabetes awareness programs • education of carers of handicapped diabetic patients • clinical (Royal and repatriation hospitals) • management of diabetes for those with gestational diabetes • one-to-one counselling, including telephone, home visit • translation sessions for those with language/ cultural problems *Organisational* • support sessions • diabetes awareness group programs (comm) • one-to-one counselling • clinical services in the country • staff education in nursing homes *Diabetes Centre* taken up under Diabetes centre	• to empower people to manage their diabetes • to develop awareness of support from other health professionals • to reduce long-term complications (decrease in length of hospitalisation, CV, blindness and stroke) • Formal feedback is part of group activity assessment • Verbal feedback • With GPs, feedback is in the form of referrals • Patients also refer their friends and family members to diabetes educator's services *Organisational* Very little feedback *Diabetes Centre* • improved glycemic control, enhanced self-management, decreased complications and decreases morbidity dispel myths and misconceptions about diabetes for both clients and the community Feedback is in the form of improved lab results, decrease in the number of hospitalised cases and decreased length of stay	• language and cultural barriers • psychological problems • conditions which require specialised services • level of intelligence • appointment problems • the hospital nature of diabetes education being provided • people's beliefs even when required by doctors • not enough government services for diabetic patients such as blood glucose meters • difficulty for patients to become independent *Diabetes Centre* • poor coping mechanisms • low literacy level • cigarette smoking • multiple health problems • people who are taking medications which have effects on level of blood sugar • misinterpretation of info • misinformation from other sources • misperception of info needs • presence of factors which affect motivation of clients to pursue better self-management	The amount and nature of diabetes education – some younger patients want to know the anatomy and physiology of the disease while older people would just like to know day-to-day survival. • Patients should be also referred to specific counselling (eg podiatry)	• Pharmacists in the hospital has been consulted on issues like drug interactions of anti-diabetic drugs • Community pharmacists could keep an eye for patients on multiple drugs • Patients could be advised to check with their GPs or referred to other health professionals when they sense patient's needs • Though pharmacists may not have the time or regular practice to check meter or pen techniques, it would be helpful if they could do so. *Diabetes Centre* • drug info including presence of sugar in some preparations, interactions • people who purchase blood glucose meters may be referred to diabetes centre for proper education • people may be properly advised re: advertised medications • they may discuss clients' medication problems w/ physicians because of similarity in educational backgrounds

5. Social Worker • to deal with psycho-social problems encountered by diabetic clients, in cases where problems are detected and when compliance is poor	taken up under Diabetes Centre	• for clients to be able to deal with factors affecting their management of diabetes (eg irrational ideas, lack of family support, emotional problem Feedback received is more on the services of the centre as a whole. Positive comments about programs from patients and recognition of the government of the value of a social workers' services	• poverty + bad health + ignorance • context of diabetes in the family and in the society • various attitudes to diabetes		• pharmacists could help by referring identified diabetic patients to the Diabetes Centre • The pharmacist could also help by asking patients basic questions whether they are getting enough help in their diabetes and could guide them where to get help

Services of the Northern Region Diabetes Centre
Mulgrave Street, Launceston
Background

The diabetes centre is a multi-disciplinary health centre which caters to the health care needs of diabetic clients, their families and the general community in the 003 area. Established in 1990 by the Federal government and presently managed by the State government, the centre had already catered to 2246 clients as of May 1996. This number is a fraction of the 5,000 minimum projected diabetics (4% of the population) in the northern region.

On an average daily basis, the staff as a whole is able to attend to 40-60 clients a day. Almost 85% of these clients are NIDDMs and the remaining, IDDMs. Some of these patients are in-patients from the Launceston General Hospital, others are referred by general practitioners, family and friends.

The centre's current staff include two nurse diabetes educators, a dietitian, an endocrinologist, a podiatrist, a social worker, a receptionist/secretary and a director who is also the clinical nurse manager. They provide various programs to their clients and the community, both on an individual and group basis. These programs and other activities are:

- New Referrals Group
- In-patient Counselling
- Social Support Group (eg. Launceston Larrikins)
- "Caring for my Diabetes" Follow-up Group
- Age-specific Support Group (eg. children, elderly)
- Cooking Demonstrations
- Video Hire (eg. Diabetes, Lifestyle, Instructional)
- Provision of diabetes gadgets (eg.blood glucose monitors, Novo-pens, injectees, finger-pricking devices, starter kits)
- Coordinated Activities with the Diabetes Australia, Inc (eg. diabetes awareness programs, children camps)

The staff holds a weekly staff meeting/case conference. Apart from the regular organisational agenda, these meetings give each member of the team an opportunity to discuss matters concerning individual patients and contribute ideas and facts important for handling difficult cases. Internal referrals of clients (from one member of the staff to the other) occur as one

sees necessary. For example, clients who may experience difficulty in managing their diet or other aspects of care may be advised to see the social worker to determine whether some psycho-social factors affect a particular client. In cases where clients have other problems such as alcohol addiction and incontinence, they are referred to outside institutions or practitioners.

Overall, the Northern Region Diabetes Centre seems to have achieved their objective of helping diabetic clients, their families and the community from the variety of services they offer. However, since there are more diabetic people who still don't know about their existence and their available services, it is expedient that an effective referral system such as other health professionals in the community, continue to refer diabetic clients to them.

OVERALL NIDDM COUNSELLING IN TASMANIA

KEY PROVIDERS:

GP-general practitioners (public and private practice)
DE-diabetes educators (hospital, diabetes centre, Diabetes Australia)
ND-nutritionist/dietitian (private practice, hospital, diabetes centre)
PD-podiatrists (private practice, diabetes centre)
SW-social worker (diabetes centre)
SP-specialists (endocrinologists, ophthalmologists)*
NU-nurses (community practice)*
PH-pharmacists*

SCOPE:

general health education
description of diabetes
management:
- medications
- nutrition and weight reduction
- exercise
- footcare, vascular and neurological issues
- psychological and social factors affecting diabetes management
- reduction of risk factors for cardiovascular disease
- blood glucose monitoring
- use of insulin devices

MODES:

one-to-one verbal counselling (in person, by phone, home visit)
group counselling
- newly-diagnosed NIDDMs
- handicapped/carer counselling
- nursing home/hospital staff counselling
- gestational diabetics
- annual education program

cooking demonstrations/social meetings
community education as in diabetes awareness program
written materials on diabetes and its management
referral to other health professionals

COUNSELLING DIFFICULTIES

provider-related
- motivational drift in follow-up of patients
- variable counselling performance among GPs
- inadequate number (eg dietitians, social workers)
- provision of wrong or inadequate information (eg intake of sugar)
- poor perception of information needs of patients
- time limitation (community GP)
- comprehensiveness of provided service (GP)

process-related
- lack of public information about available services (eg diabetes centre, DA)
- cost (private consultation, blood glucose meters)
- physical location (eg stairs) and setting (eg hospital setting)
- access to services (eg rural)
- appointment problems (hospital)

patient-related
- language and cultural barriers (depends on practice setting)
- health beliefs (eg nature of NIDDM)
- literacy level
- psychological and emotional problems including poor coping mechanisms
- withholding of relevant information
- misinterpretation of information
- multiple health problems
- unhealthful habits (eg smoking)

AREAS OF INADEQUATE COUNSELLING SPECIFIC TO HEALTH PROFESSIONS

GP-proper use of insulin delivery systems, dietary counselling, proper use of glucose monitoring devices, hypoglycemia, what to do during sick days, exercise and footcare

PD-general footcare, blood pressure control, use of medications and the need for regular vascular and neurological assessment

ND-blood glucose monitoring, previous contact with a diabetes educator

DE-counselling tailored to the patient's needs (comprehensive, day-to-day survival), referral to specific counsellors (podiatrist, nutritionist, psychologist)

SW-available health services for diabetic patients

EXPECTED ROLE OF PHARMACISTS IN NIDDM COUNSELLING

GP-drug information including drug interactions for those on multiple drug therapy, proper use of insulin delivery systems and glucose monitoring devices, referral to the GP regarding need for other health services and problems

PD-information on anti-diabetic medications, help patients understand about diabetes and its complications, reinforce need for vascular and neurological assessment

ND-promotion of dietary principles, proper timing of medication intake in relation to meals (drug-food interactions), pick up aspects of patient's condition which may require help from other health professionals

DE-drug interactions especially for those on multiple drug therapy, referral to GP, diabetes centre or to other health professionals depending on patient's needs, check and re-check meter or pen techniques, give information regarding the presence of sugar in some drug preparations and also advertised medications, and discuss the clients' medication problems with doctors

SW-referral of identified diabetes patients to diabetes centre, by asking basic questions whether they are getting enough help in their diabetes and where they could get help

IMPLICATIONS ON PHARMACY PRACTICE AND TRAINING

The demands of pharmacy practice in a non-structured ambulatory setting like a community setting differs from an institutional setting. Resources necessary for effective patient counselling are limited and are dependent on many factors which could be classified as: healthcare provider-related, process-related and patient-related. THe counselling of NIDDM patients in Tasmania could follow the "Shared Care" principle suggested by Short (1994). This principle focuses on a team approach to NIDDM management in Australia where the burden of management falls into the hands of the general practitioner as the main health care coordinator with other skilled health professionals - dietitians, podiatrists, diabetes educators, psychologists - providing support in terms of patient management, routine assessment, changing insulin dose and simple screening procedures. In addition, he also believed on "people empowerment" in which a good, cost-effective management is best achieved by teaching individual patients to take control of their own targets and therapy rather than having these imposed on them. These two principles will be utilised in determining the appropriate role of community pharmacists in the counselling of NIDDM patients in the State.

Aspect of Counselling	Practice Implications	Training Implications
Drug Therapy • useful information about hypoglycemic medications (drug interactions, proper intake of medications in relation to meals, what to do during sick days) • signs and symptoms of hypoglycemia and how to deal with them	ability to: • provide adequate information about hypoglycemic medications • identify potential drug-drug interactions, involving prescription and non-prescription medications, for those in multiple drug therapy • advise on hypoglycemia	• thorough knowledge on the pharmacotherapy of hypoglycemic drugs such as the sulfonylureas, metformin and insulin and other drugs for which significant adverse interaction is expected • knowledge and skill regarding the identification and emergency treatment of hypoglycemia
Devices • blood glucose monitoring devices • insulin delivery systems	ability to: • explain and demonstrate the proper use of various blood glucose monitoring devices • explain and demonstrate the proper use of different insulin delivery systems • check and re-check knowledge of patients regarding the proper use of such devices	• knowledge and skill regarding blood glucose monitoring devices and insulin delivery systems, their specific characteristics and proper uses
General Diabetes Education • the disease and its management	ability to: • describe and discuss the nature, symptoms and signs of complications of NIDDM to patients/clients/carers when necessary • reinforce through discussion, lifestyle changes necessary in the comprehensive management of NIDDM	• sufficient background information regarding the pathophysiology of diabetes • familiarisation with lifestyle factors affecting NIDDM • knowledge and skill about self-management of diabetes

Non-drug Therapy (Lifestyle Factors) • Nutrition (diet principles, weight reduction, food choices, diet effects on blood glucose level)	ability to: • provide appropriate ways of diet and weight management in conjunction with drug therapy • advise patients/clients, with poor dietary control, on the effects of proper/improper diet on the management of diabetes and its complications	• adequate knowledge and understanding of diet principles and dietary requirements of diabetic patients • understanding of relationship between weight control and the onset of disease complications • knowledge and skills in providing practical nutrition advice
• Footcare (hygiene, palliative care, physiology)	ability to: • explain importance and demonstrate methods of maintaining foot hygiene and palliative care • remind patients regarding the need for regular vascular and neurological assessment	• sufficient grasp of the pathophysiology of vascular and neurological complications of diabetes • familiarity and skill regarding foot hygiene and palliative care
Shared Care Approach in NIDDM Counselling (The role of other providers and the community pharmacist's role in the care of NIDDM patients in Tasmania)	ability to: • properly communicate with the general practitioner regarding patient's problems regarding medications and other health needs • refer patients to their healthcare coordinator and to other providers depending on the level of their information needs • coordinate with and reinforce important concerns of other members of the health team to patients	• familiarity with the counselling practice of other healthcare providers in the State, particularly those directly involved in the care of NIDDM patients • possession of patient and interprofessional communication skills • familiarity with practice locations, institutions, and health services available in the community for diabetic patients

APPENDIX 5
Contact Summary Forms of Visits

5.1 Study 4

- International Diabetes Institute
- Diabetes Australia

Appendix 5.1

CONTACT SUMMARY FORM

Contact Type:

Visit ___X___ Setting ___D.A. Office___

Phone _____ Date ___02/04/96___

Contact Person: (code) _____MC_____

1. Reason/s for contact

Overview of services provided by Diabetes Australia

2. Main points gathered through this contact

1. Different services and materials used for counselling

2. Education programs

3. Interesting points which you discovered in this contact

1. Only one diabetes educator in Hobart but there are additional educators in the north of the State.

4. New or remaining aspect to be taken up in future contacts with this person/ institution/ organisation

1. Information materials on NIDDM education.

CONTACT SUMMARY FORM

Contact Type:

Visit __1X__ Setting ___Office_____

Phone _____ Date ___06/12/95_____

Contact Person: (code) _____C Hines_____

1. Reason/s for contact

To get an overview of the services of the International Diabetes Institute

2. Main points gathered through this contact

1. Use of the patient information checklist
2. Problems experienced by NIDDM patients

3. Interesting points which you discovered in this contact

1. The use of the patient information checklist
2. Comprehensiveness of the service

4. New or remaining aspect to be taken up in future contacts with this person/ institution/ organisation

1. Materieals for counselling available in their information store.

APPENDIX 6

Document Summary Forms

6.1 Study 4

- International Diabetes Institute
- Diabetes Australia
- RACGP Patient Participation Programme Form
- Podiatry Information Leaflet
- Nutrition Information Sheets

DOCUMENT SUMMARY FORM

Document Name: McCarty D, Zimmet P. Diabetes 1994 to 2010: Global estimates and projections. Melbourne: International Diabetes Institute; 1994

Document Kind: Book

Source Person (Code): CH **Date:** 06/12/95

Event associated with this document:
Interview at International Diabetes Institute, Melbourne

Relevance or importance of document:
Authorative document published by a WHO collaborating centre for diabetes mellitus

Brief summary of contents:
Report of estimates of world-wide prevalence of diabetes mellitus in 1994 and projections of prevalence for the years 2000 and 2010.

1994 estimates were that 110.4 million people world-wide have diabetes with approximately 98.9 million of these having NIDDM. By 2000, the total number is projected to be 175.4 million and by 2010 to be 239.3 million world-wide.

Regionally, the greatest potential for growth is predicted to be in Asia and Africa where diabetes could be 2.5 to 3 times more common in year 2010 than it was in 1994.

DOCUMENT SUMMARY FORM

Document Name: Your diabetes: Health care guide. Hobart: Diabetes Australia (Tasmania); 1996

Document Kind: Booklet

Source Person (Code): MC **Date:** 05/05/96

Event associated with this document:

Interview to determine role of Diabetes Australia in diabetes counselling.

Relevance or importance of document:

A useful guide for patients which provides a checklist rather than substantial information.

Brief summary of contents:

This little booklet is aimed at assisting patients plan their diabetes care. It provides:

- a "need to know" checklist
- some guidelines on the role of various health professionals and others in the care of diabetes
- guides on when the doctor should be consulted.

DOCUMENT SUMMARY FORM

Document Name: Patient participation program. Royal Australian College of General Practitioners

Document Kind: Survey form

Source Person (Code): NC **Date:** 10/05/95

Event associated with this document:
Interview of a medical general practitioner

Relevance or importance of document:
Feedback form

Brief summary of contents:
This form was part of a survey by the RACGP to determine service and education needs. It surveys patients' experience and level of satisfaction with visits to general practitioners.

DOCUMENT SUMMARY FORM

Document Name: The foot and diabetes.

Document Kind: Booklet

Source Person (Code): MG **Date:** 04/04/96

Event associated with this document:
Interview of a podiatrist

Relevance or importance of document:
Patient information booklet

Brief summary of contents:
A well written booklet covering the importance of foot care for diabetics, how to overcome problems, and practical aspects of foot care.

DOCUMENT SUMMARY FORM

Document Name: 1. Food Choices for Diabetes
2. Services which provide nutrition resiurces and support

Document Kind: Leaflets

Source Person (Code): JW **Date:** 23/04/96

Event associated with this document:
Interview with a dietitian

Relevance or importance of document:
Nutritional information for diabetics

Brief summary of contents:

1. An easy to read two page leaflet providing nutritional information of importance to diabetics.

2. As the name indicates, a list of service organisations from which a patient can gain information on nutrition if required.

APPENDIX 7

Training Program Budget

APPLICATION OF FUNDS

Budget

		Amounts estimated
1.	Salaries (Lecture fees)	
	• Medical specialist/Education consultant @ $150/hour (10 hours)	1500.00
	• Health professional lecturers @ $120/hour (15 hours)	1800.00
2.	Equipment	
	• Demonstration and information materials (eg NIDDM medications, blood glucose monitoring devices, insulin pens)	1000.00
3.	Travel	500.00
4.	Other	
	• telephone, facsimile, mailing	290.00
	• Production expenses (A4 paper, printing, envelopes, photocopying, folders, video vignette, cards, certificates, diaries)	2500.00
	Subtotal	**7590.00**
5.	University On-costs (20% of budget)	1518.00
	Budget Total	**9108.00**

APPENDIX 8

Outcomes Evaluation Measures

8.1 Diabetes Knowledge Test (DKT)

8.2 Communication Knowledge Test (CKT)

8.3 Effective Communication Skill (ECS)

8.4 Visual Analogue Scale

8.5 Information Needs Checklist

8.6 NIDDM Patient Diary

8.7 Referral Slip

8.8 Ethnography Guide Questions

8.9 Patient Knowledge Test (PKT)

8.10 NIDDM Counselling Tally Card

NIDDM Quiz

Instruction: Read the statements or questions carefully and tick (√) your answers on the answer sheet provided. Unless otherwise stated, more than one answer may be correct.

1. In NIDDM, the pancreas produces some insulin but is not sufficient to lower blood glucose levels to normal (T or F).

2. Being overweight could be partly responsible for 'insulin resistance' in a NIDDM patient (T or F).

3. Which is NOT a symptom of diabetes?
   a) thirst
   b) frequent urination
   c) unexplained weight gain
   d) extreme tiredness

4. Which is NOT a likely complication of diabetes?
   a) infections
   b) kidney damage,
   c) eye damage
   d) heart and circulation problems,
   e) none of the above

5. On the average, the renal threshold or the blood glucose level at which glucose spills over into the urine is:
   a) 10 mmol/L
   b) 20 mmol/L
   c) 5 mmol/L
   d) none of the above

6. When a person has ketoacidosis, he/she may experience: (Mark only one answer)
   a) sweating and convulsions
   b) rapid onset of coma
   c) thirst and excessive urination
   d) palpitations

7. Most of the oral tablets for NIDDM works by:
   a) stimulating the pancreas to produce more insulin
   b) helping the body's insulin to work more effectively
   c) directly reducing the blood sugar by decreasing its absorption
   d) producing insulin-like metabolites
   e) all of the above

8. Which of the following statements is/are TRUE:
   a) tolbutamide and glipizide are converted in the body to inactive metabolites and so are safer for patients with renal failure
   b) diabetics taking sulphonylureas never become hypoglycaemic enough to require treatment
   c) sulphonylureas may cause GI distress and weight gain
   d) metformin is contraindicated in combination with a sulphonylurea or insulin

9. If a blood sugar test is 14.4 mmol/L:
   a) additional insulin must be immediately given
   b) food should be increased by the next meal
   c) urine should be tested for ketones
   d) oral tablet should be taken
   e) a or d

10. When blood sugar is controlled by long acting medication, a bedtime snack:
    a) is important
    b) is not important
    c) should be taken from the 'free' exchange list
    d) is not advised

11. Immediate self-treatment of a 'hypo' consists of this first step, to be followed by eating some longer acting carbohydrate foods:
    a) take 1 small glass of lemonade
    b) drink a glass of milk w/ sucralose
    c) take 3 glucose tablets or glucozade
    d) drink black coffee or tea
    e) chew 3 barley sugars

12. The normal amount of blood sugar when fasting (not eating) is:
    a) 0-2.5 mmol/L
    b) 2.5-3.5 mmol/L
    c) 3.5-5.8 mmol/L
    d) 5.8-7.1 mmol/L
    e) 7.1-10.1mmol/L

13. Which of the following statements is/are TRUE about alcohol:
    a) can be incorporated into the diet of someone with diabetes
    b) may react with the tablets or insulin to increase the risk of hypoglycemia
    c) may react with the tablets or insulin to increase the risk of hyperglycemia
    d) can contribute to weight gain

14. A type of drug which masks the signs of low-blood sugar is:
    a) a blood thinner
    b) aspirin
    c) paracetamol
    d) beta-blocker

15. Good care of the feet is important because persons with diabetes often have:
    a) varicose veins
    b) corns and calluses
    c) poor circulation
    d) fungal infection

16. The following are advised to promote blood circulation:
    a) daily exercise
    b) avoid wearing of garters and tight socks
    c) a sip of wine
    d) hot water bottle
    e) avoid smoking

17. The following foot conditions may require a patient to see a podiatrist and/or a doctor: (Mark only one answer)
    a) throbbing pain
    b) discoloration
    c) swelling
    d) a and c only
    e) a, b and c

18. Physical examination by a doctor before an exercise program is required if one is: (Mark only one answer)
    a) male and over 35 y/o
    b) female over 40 years
    c) overweight by more than 7 kilos
    d) none of the above
    e) all of the above

19. There is no need to modify the dose of anti-diabetic medications when an exercise program is initiated as part of daily routine (T or F)

20. Easily digested and absorbed foods are preferable for diabetics (T or F)

21. Fatty foods contain twice the energy (kilojoules) of protein or carbohydrate foods (T or F)

22. Some sugar substitutes, though not affecting blood glucose levels, could have laxative effect (T or F)

23. When a diabetic patient gets sick, eg. flu, diarrhoea, which of the following advice SHOULD BE given to the patient prior to contacting a doctor:
    a) Stop all anti-diabetic medications immediately
    b) Test blood or urine glucose levels frequently within a 24-hour period
    c) Increase the amount of food intake
    d) Maintain sufficient fluid intake

20/03/97

Effective Communication Quiz

Instructions: If a statement is true, write T and if a statement is false, write F on the space provided.

1. A helping relationship involves a mutual sharing of ideas, experiences and feelings by both participants.____
2. Active listening includes body posture, facial expressions and tone of voice.____
3. Placating or reassuring a person about a negative health issue is helpful. ____
4. Empathy is being able to relate to someone else's situation. ____
5. Paraphrasing and summarising are synonymous.____
6. A patient's answer also depends on how a question is posed by the health provider.____
7. The interpretation of information is not affected by the setting where the communication occurs.____
8. Patient medication counselling is all about providing sufficent advice about medications. ____
9. The information to be given to a patient should be about what a pharmacist thinks the patient needs. ____
10. Good communicators use open questions to focus on specific pieces of information.____
11. The patient's degree of understanding of pharmacist's instruction about medications is reduced when the former is worried or anxious.____
12. People assign meaning to words based on the context they perceive the sender is using.____
13. Non-verbal messages are always congruent with the verbal messages they accompany.____
14. One step to improve one's communication skills is to become aware of his/her own interactions.____
15. The process of counselling requires several component skills.____

II. Instruction: Please tick (√) appropriate answer/s from the given choices. There are more than one answer unless otherwise stated.

1. Which of the following statements is/are TRUE about LACK OF EYE CONTACT:

   a) it may convey to the patient that you are not confident about what you are saying
   b) it may mean to him/her that you are not interested about the situation or the patient him/herself
   c) limit your ability to assess feedback from patient
   d) it is not always noticed by patients

2. Which is/are NOT an element of effective non-verbal communication:

   a) arms folded in front of chest
   b) closed posture (eg legs crossed at kness)
   c) slight lean toward the other person
   d) shoulders square to the other person

3. When a patient is reluctant to answer a direct question from you regarding his/her medication compliance, the type of question to ask is: (one answer only)

a) open-ended
b) close-ended
c) leading
d) none of the above

4. Non-verbal component of our total communication accounts for: (one answer only)

a) more than 55%
b) 20%
c) 10%
d) none of the above

5. Assertiveness can be properly expressed by a pharmacist through the following way/s:

a) initiating communication with a patient

b) avoiding interaction with patient unless asked a question

c) responding empathically to an angry patient

d) getting a patient turn his/her criticism into a useful feedback

e) making recommendations to doctor when considered necessary

Communicating with Patients

Instructions: Please write in two or three sentences your verbal response to the following statements supposedly made by NIDDM patients or their carers who paid a visit to your pharmacy.

I. Active Listening/Empathic Responding (Source: Tindall, Bearsdley, Kimberlin 1989, pp 50-53)

Mrs Jones, a 58-year old woman, who came to get a prescription filled for her husband, Peter, who is a NIDDM for 10 years.

"Peter has been sick so long, I wonder if he's ever going to get well. I just don't know if I can keep going much longer".

---

b. An elderly man, while waiting for his prescription to be filled mentioned (Source: Info Needs and Resources of NIDDM patients-YRR):

"I was about to attend a diabetes education seminar but the lady over there told me that if I didn't attend that seminar, they will not send me any newsletter. With that, I decided not to have anything to do with their seminars."

II. Eliciting Information (Ref: Tindall, Bearsdley, Kimberlin 1989, pp 9)

c. Mrs Maxwell, a regular NIDDM customer, is now taking several medications and complained to you that:

"I'm having trouble taking potassium. I don't feel well".

---

d. On a busy day, Mr Wycowicz dropped by to have his prescription for diabetes medications, including insulin, re-filled and added that he's going to Bali for a two-week holiday. You gave several handy advice about what to do with his medications during his trip, to which he repeatedly replied:

"Yes, I understand. I know that".

III. Sending Information

e. Mrs Young, a 40-year old NIDDM, is also a chain smoker. One time, while buying a cold preparation from your pharmacy, she told you:

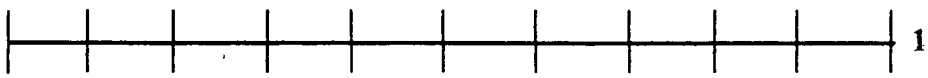
"I have been a smoker for 20 years now but I don't see how it could be harmful to my health".

APPLIED COMMUNICATION SKILLS

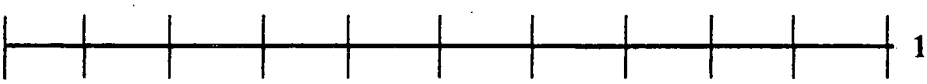
SKILLS COMPONENTS
VISUAL ANALOG SCALES

PHARMACIST NO. [ ]

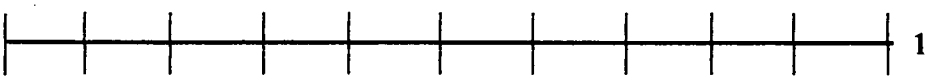
ATTENDING and ACTIVE LISTENING SKILLS

1  10

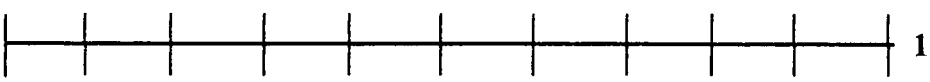
EMPATHIC RESPONDING SKILLS

1  10

INTERVIEWING SKILLS

1  10

INFLUENCING SKILLS

1  10

Facts about the Diabetes Health Information Needs Checklist

WHAT IS IT?

The *Diabetes Health Information Needs Checklist* is a written screening device to determine basic information needs of Non-insulin Dependent Diabetes Mellitus patients who obtain their anti-diabetic medications from your community pharmacy.

The main parts of the checklist are:

1. **Name of Pharmacy**
   identifies the pharmacy which is offering this specialised NIDDM Patient Counselling Service

2. **Introduction**
   introduces the role of the pharmacist in the diabetes healthcare team and establishes a professional link between the pharmacist and the patient

3. **Basic Personal Information**
   refers to the preliminary information about the customer such as the name of the diabetic patient, the year diabetes was diagnosed and his/her address. It will enable us to know whether a customer is a newly diagnosed or is a long-standing diabetic patient. Later, additional personal information will be required for the NIDDM Patient Counselling Diary for Pharmacists which will be discussed separately.

4. **Diabetes Information List**
   lists down the major aspects of diabetes management and when ticked by the patient, identifies potential areas of patient counselling such as:

- Nature of Diabetes
- Symptoms and Complications of Diabetes
- Diabetic Nutrition
- Anti-diabetic Medications
- Hypoglycemia/Hyperglycemia
- Sick Days
- Exercise
- Footcare
- Blood Sugar Monitoring
- Other aspects specified by the patient/client

5. **Additional Instruction**
   requests the patient to return the information checklist to the pharmacist when the script is filled. This will enable the pharmacist to discuss with the patient briefly about the NIDDM Patient Counselling Diary and determine their willingness to be part of the NIDDM-PMC study.

6. **Form Number (NIDDM-PMC Form No)**
   This number, consists of two parts, pertains to the number of the NIDDM pharmacist participation number and the number of the patient under his/her care. For example, if the Form No is 1-03, then the pharmacist participation number is 1 and the patient's specific number is 03. This will help identify a patient with the pharmacist who undertakes the NIDDm counselling with him/her.

WHAT IS IT IMPORTANT?

The NIDDM Information Checklist, as an information needs screening device, in conjunction with the NIDDM Patient Counselling Diary, is expected to:

- assist a pharmacist in prioritising areas of diabetes management for counselling a patient at a more convenient, mutually agreed time
- help newly-diagnosed diabetics become aware of the role of the pharmacist in the diabetes healthcare team, thus helping to establish the 'trust' factor in the pharmacist-patient relationship

- aid the pharmacist in deciding appropriate intervention without having to engage in time-consuming enquiry during pharmacy's busy hours.

WHAT ABOUT ITS READABILITY?

Using readability scales, the NIDDM Information Checklist has the following scores:

- Flesch Reading Ease of 73.90 (the 70-80 range denotes fairly easy to read written material; understandable to 90% of patients ≥25 years old and 77% of those older than 65 years old)
- Flesch-Kincaid Grade Level of 6.18 (equivalent to Grade Six, completed grade level required to understand)

_____ *Pharmacy*

∞Diabetes Information Checklist∞

Dear Customer,

Your pharmacist is part of the diabetes healthcare team whose main goal is to ensure your health and well-being. Please fill up the required information below so we can adequately respond to your specific health needs.

Your Name_____

Year Diabetes Diagnosed_____

Address_____

Please tick (√) if you like to know more about any of the following:

• What diabetes is	
• Diabetic symptoms and possible complications	
• Appropriate food choices and their preparation	
• The correct times and amount of medications to take	
• What to do with hypoglycemia or hyperglycemia	
• What to do during sick days, for example, flu	
• The importance of exercise and its benefits	
• Proper care of the feet	
• Measurement of blood sugar	
• Other, please specify_____	

Kindly return this slip to your pharmacist when your script is filled.

Thank you.

NIDDM-PMC Form No ___

THE NIDDM PATIENT COUNSELLING DIARY

Diary No _-__

Reminder to Pharmacist

1. This diary will be used only after the patient has filled-in the Diabetes Information Checklist and after a report has been received from the NIDDM-PMC Research Team, at your mutually agreed times with the patient.

2. Please review the NIDDM Info Checklist, the Medication Profile the Diabetes Management/Education Checklist before proceeding to the Intervention Plan.

3. Write down important points you have gathered from the above sources and use them for developing your intervention plan.

4. The intervention plan includes your assessment of the patient's needs and the corresponding interventions you find appropriate.

5. Examples of interventions are: medication advice, lifestyle advice, referrals, BGM demo, written info, purchase of device or non-prescription items, emergency treatment, BP measurement, etc. You may add more to this list depending on your reasoned opinion.

6. The Intervention Plan is expected to be accomplished during consultation with the patient.

7. Remember to use simple words and brief statements or questions when interviewing the patient.

Thank You

I. PERSONAL INFORMATION

Name_____ Age_____ Yrs of NIDDM ____
Address_____
Phone_____ Gender _____

Allergies: _____
Please encircle where appropriate: Cigarettes/Alcohol/Coffee/Special Diets

II. PATIENT'S HISTORY

Do you have any of the following conditions, other than your diabetes?

	Year of Diagnosis	Any Recent Difficulty / Hospital Admission
Asthma	_____	_____
Lung Disease	_____	_____
Cancer	_____	_____
Depression	_____	_____
Kidney Disease	_____	_____
Liver Disease	_____	_____
Heart Disease	_____	_____
High Blood Pressure	_____	_____
Stroke	_____	_____
Arthritis	_____	_____
Osteoporosis	_____	_____
Hysterectomy	_____	_____
Other Conditions	_____	_____
	_____	_____

Any other health concerns that bother you at the moment? (eg flu, skin rash)

_____
_____
_____
_____
_____
_____

III. MEDICATION PROFILE

A. Current Medications

Drug Name/ Brand	Dose (mg)/ Unit	Frequency of Intake	Date Commenced/ Comments

B. OTHER MEDICATIONS TAKEN WITHIN LAST TWO MONTHS

Drug Name/ Brand	Dose (mg)/ Unit	Frequency of Intake	Date Commenced/ Comments

C. ANY PARTICULAR DIFFICULTY WITH ANY MEDICATION?

_____

_____

D. PHARMACIST'S NOTES/ADVICE ON MEDICATIONS

_____

_____

_____

IV. DIABETES HEALTHCARE CONSULTATIONS

Health Professional	Frequency of appointment	Date Referred	Date of Pt Visit
General Practitioner		_/_/__	_/_/__
Diabetes Educator		_/_/__	_/_/__
Nutritionist/Dietitian		_/_/__	_/_/__
Podiatrist		_/_/__	_/_/__
Eye Specialist		_/_/__	_/_/__
Other_____		_/_/__	_/_/__
Other_____		_/_/__	_/_/__

V. DIABETES MANAGEMENT/EDUCATION CHECKLIST

A. BLOOD GLUCOSE MONITORING

Method of measuring Bld Glucose at First Appointment: None/ Urine/Blood
Type of Device Used_____
Frequency:____ times a day/_____times a week
BGL at last GP Appt _____ Date of last GP Appt _____

Aspect	Appt 1 _/_/__	Appt 2 _/_/__	Appt 3 _/_/__	Appt 4 _/_/__
Is blood glucose monitored?				
Skill in monitoring BGL?				

B. DIABETES EDUCATION

DIABETES

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Physio of Diabetes (Organs Involved & Functions)				
Abnormal CHO Metabolism				
Signs and Symptoms				
Reasons/Advs of BG control				
Complications (retinopathy, nephropathy, etc)				
Written Info Received?				

HYPOGLYCEMIA

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Causes- exercise, alcohol, mealtime, medications				
Signs and Symptoms				
What to do/Treatment				
Written Info Received?				

HYPERGLYCEMIA

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Causes				
Signs and symptoms				
What to do				
Written Info Received?				

NUTRITION

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Diet Pyramid				
Nutrients: Sugar, Fibre, Fat, Protein				
Cooking-Low fat methods, Recipe Adaption, Cookbooks				
Sweeteners, label reading, alcohol effect, eating out				
Wt Control/Glycemic Index				
Written Info Received?				

EXERCISE

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Rationale/Effect on BSL, Wt				
Precautions -Hypo, Insulin Adjustment, CHO Loading				
Exercise Plan				
Written Info Received?				

CARE OF THE FEET

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Precautions/Reasons				
Self-inspection/Gen Footcare				
Footwear				
Complications/First Aid				
Neuro Assessment (Podiatry)				
Written Info Received?				

SICK DAYS

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
What to do-BGM, meds, meals consult GP				

OTHER ASPECTS

Aspects	_/_/__	_/_/__	_/_/__	_/_/__
Effects of Smoking				
Travel Meds Reminder				
Insulin				
Pregnancy/Contraception				
Written Info Received?				

VI. PHARMACIST'S INTERVENTION PLAN

Appointment Date _____

Patient's Information Deficit Areas (based on Diabetes Info Checklist. Personal Information, the Medication Profile and the Diabetes Management/Education Checklist)

_____
_____
_____
_____
_____
_____

Your Assessment/Plan

_____
_____
_____
_____
_____
_____
_____

Interventions

_____
_____
_____
_____
_____
_____
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_____
_____

Appointment Date _____

Patient's Information Deficit Areas (based on Diabetes Info Checklist, Personal Information, the Medication Profile and the Diabetes Management/Education Checklist)

_____
_____
_____
_____
_____
_____

Your Assessment/Plan

_____
_____
_____
_____
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_____

Interventions

_____
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Appointment Date _____

Patient's Information Deficit Areas (based on Diabetes Info Checklist, Personal Information, the Medication Profile and the Diabetes Management/Education Checklist)

_____
_____
_____
_____
_____
_____

Your Assessment/Plan

_____
_____
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Interventions

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Appointment Date _____

Patient's Information Deficit Areas (based on Diabetes Info Checklist, Personal Information, the Medication Profile and the Diabetes Management/Education Checklist)

_____
_____
_____
_____
_____
_____

Your Assessment/Plan

_____
_____
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_____
_____

Interventions

_____
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_____
_____
_____

Appointment Date _____

Patient's Information Deficit Areas (based on Diabetes Info Checklist, Personal Information, the Medication Profile and the Diabetes Management/Education Checklist)

Your Assessment/Plan

Interventions

Appendix 8.7

_____Pharmacy

_____

REFERRAL SLIP

Date_____

Dear _____,

I would like to refer to you, _____
a NIDDM patient, whom I have given advice and who may require your professional attention regarding:

blood glucose monitoring	☐
symptoms of complications	☐
annual diabetes check-up	☐
neurological assessment	☐
eye examination	☐
general diabetes education	☐
medication problem _____	☐
other _____	☐

_____

_____

_____

Your assistance regarding this matter is appreciated. Thank you.

You may contact me at ph no _____ for any query regarding this patient.

Yours sincerely,

_____

Pharmacist

_____Pharmacy

_____

REFERRAL SLIP

Date_____

Dear _____,

I would like to refer to you, _____ a
NIDDM patient, whom I have given advice and who may require your professional attention regarding:

blood glucose monitoring	☐
symptoms of complications	☐
annual diabetes check-up	☐
neurological assessment	☐
eye examination	☐
general diabetes education	☐
medication problem _____	☐
other _____	☐

_____

_____

_____

Your assistance regarding this matter is appreciated. Thank you.

You may contact me at ph no _____ for any query regarding this patient.

Yours sincerely,

_____

Pharmacist

WORKPLACE EVALUATION

ETHNOGRAPHY GUIDE QUESTIONS

1. PLEASE DESCRIBE YOUR DAILY WORK, IN TERMS OF BEING BUSY.

2. DESCRIBE THE COUNSELLING ROLE OF A PHARMACIST

3. FEEDBACK ABOUT COUNSELLING

4. BARRIERS TO YOUR NIDDM COUNSELLING IN THE LAST 6 MONTHS

5. USEFULNESS OF TRAINING PROGRAM TO YOUR WORK

6. ANY SUGGESTION TO IMPROVE TRAINING PROGRAM

NIDDM Patient Information Test (1)

Patient Name _____

Age _____ Suburb _____

Instructions: Please tick (√) the answer that you think best completes the statement or answer the question. Only one answer per number. Thank you.

1. Insulin is made by the :
   a) adrenal gland
   b) pancreas
   c) pituitary
   d) thyroid
   e) liver

2. The normal amount of sugar in the blood when not eating is:
   a) 0-50 mg/ml
   b) 50-70 mg/ml
   c) 70-115 mg/ml
   d) 140-200 mg/ml

3. Uncontrolled diabetes may lead to any of the following conditions, EXCEPT:
   a) heart and circulation problems
   b) stomach ulcers
   c) kidney problems
   d) eye problems

4. A symptom of high blood sugar is:
   a) less urination
   b) weakness
   c) less thirst
   d) weight gain
   e) high blood pressure

5. A type of drug which masks (hides) the signs of low blood sugar is a:
   a) blood thinner
   b) aspirin
   c) sulfa medicine
   d) beta-blocker

6. The main cause of foot problems with diabetics is:
   a) varicose veins
   b) corns and calluses
   c) poor circulation
   d) fallen arches
   e) big feet

7. When trimming toenails:
   a) trim toenails across
   b) apply body lotion between toes when done
   c) do not trim nails too short
   d) trim closely into the corners

8. Diabetes is NOT caused by:
   a) genetics (inherited factors)
   b) obesity (being overweight)
   c) high blood pressure
   d) environmental factors
   e) insulin resistance

9. Some oral anti-diabetes medications work to lower blood sugar by:
   a) causing the release of insulin from its source organ
   b) causing more sugar loss in the urine
   c) decreasing sugar absorption from the stomach
   d) decreasing hunger

10. A sign of low blood sugar is:
    a) burning urination
    b) rapid pulse
    c) frequent bowel movement
    d) hot, flushed face
    e) muscle cramps

11. The type of food highest in calories per gram is:
    a) carbohydrate
    b) protein
    c) fat
    d) all of the above

12. The main sources of carbohydrate in the diabetes meal plan are:
    a) fats and oils
    b) bread and cereals
    c) vegetables
    d) fruits

13. A person with diabetes treating a cut or an abrasion should first:
    a) clean area with iodine and alcohol
    b) bandage the area
    c) clean area with lukewarm water and mild soap
    d) apply a torniquet

14. Which of the following methods of control should be used by everyone with diabetes?
    a) meal planning
    b) oral tablets
    c) insulin
    d) none of the above

15. The best way to assess your day-to-day diabetes control is:
    a) a written record of blood sugar tests
    b) random urine test results
    c) single blood sugar test
    d) I don't know

16. Small blood vessel disease in persons with diabetes is most readily recognised in:
    a) the feet and legs
    b) eyes and kidneys
    c) brain
    d) liver

17. The best laboratory test for diagnosing diabetes is:
    a) urine test for sugar
    b) blood test for sugar
    c) urine test for ketones
    d) I don't know

18. Which of the following food should be eaten in moderation?
    a) fried foods, chocolate, jellies
    b) eggs, milk, low fat cheese
    c) baked beans, bread, fresh fruits
    d) spaghetti and other pasta

19. Hardening of the artery in diabetic person is NOT aggravated by:
    a) smoking
    b) low fat diet
    c) high levels of blood fats
    d) high blood pressure

20. This activity is recommended to improve poor blood circulation in diabetics:
    a) daily exercise
    b) wearing garters or socks with tight tops
    c) soaking feet in warm water
    d) none of the above

21. Which is NOT a good source of sugar to use when blood sugar is low?
    a) chocolate
    b) honey
    c) hard candy
    d) Coca cola
    e) fruit juice

22. The most common type of diabetes affecting 85% of patients is:
    a) insulin-dependent diabetes mellitus (type 1)
    b) non-insulin-dependent diabetes mellitus (type 2)
    c) juvenile-onset diabetes
    d) gestational diabetes

23. The general effect of exercise is to:
    a) lower the blood sugar level
    b) increase the sugar in the urine
    c) raise the blood sugar level
    d) none of the above

24. Foods included in the lean meat list are:
    a) fish, skinless poultry, center-sliced ham
    b) ground beef, liver, heart, kidneys
    c) cheddar cheese, bologna, salami
    d) pork or lamb chops

25. Medicines for non-insulin dependent diabetics:
    a) are taken by mouth
    b) may also help someone with type 1 diabetes
    c) may substitute for exercise
    d) are injected into the vein
    e) can be bought without a prescription

26. Which is NOT a possible cause of high blood sugar?
    a) emotional stress
    b) change in other medications
    c) changes to eating plan
    d) not enough exercise
    e) none of the above

27. Which of the following statements is NOT true about what you should do when sick with other illnesses like flu, infection or diarrhoea?
    a) test your blood glucose regularly
    b) maintain your food and fluid intake
    c) stop taking your diabetes medication until you are well
    d) contact your doctor

28. Which of the following statements is NOT true about fibre in the diet?
    a) it can lower cholesterol level by increasing its removal via the bowel
    b) it can improve blood glucose control
    c) it is important for maintaining a healthy bowel
    d) it can slow digestion and absorption of food
    e) none of the above

Appendix 8.10

NIDDM PATIENT COUNSELLING TALLY CARD

Instruction to Pharmacist: Please tick specific counselling aspects which you have provided NIDDM patients since the counselling training program.

Specific Intervention	Patients											
A. Drug Information	1	2	3	4	5	6	7	8	9	10	11	12
• Name/purpose of medication												
• Dosage/frequency of intake												
• Direction for use												
• Adverse Effects												
• Drug Interactions												
• Contra-indications												
• Precautions while on medication												
B. Other Aspects of Healthcare												
• Diet plan												
• Regular exercise												
• Regular BGM												
• Footcare												
• Eye care												
• Diabetes Fact Card												
• Other												
C. NIDDM Info Checklist												
D. Referral Slip												
E. PATIENT KIT												
• Consent form												
• Patient diary												

Pharmacist's Initials _____

NIDDM PATIENT COUNSELLING TALLY CARD

Instruction to Pharmacist: Please tick specific counselling aspects which you have provided NIDDM patients since the counselling training program.

Specific Intervention	Patients											
A. Drug Information	1	2	3	4	5	6	7	8	9	10	11	12
• Name/purpose of medication												
• Dosage/frequency of intake												
• Direction for use												
• Adverse Effects												
• Drug Interactions												
• Contra-indications												
• Precautions while on medication												
B. Other Aspects of Healthcare												
• Diet plan												
• Regular exercise												
• Regular BGM												
• Footcare												
• Eye care												
• Diabetes Fact Card												
• Other												
C. NIDDM Info Checklist												
D. Referral Slip												
E. PATIENT KIT												
• Consent form												
• Patient diary												

Pharmacist's Initials _____

Appendix 9

Miscellaneous Documents

9.1 Workplace Research Protocol

9.2 Pharmacy Research Flowchart

9.3 NIDDM Counselling Update

RESEARCH PROTOCOL

1. Each pharmacist will receive a NIDDM Patient Counselling Kit containing the following items:

    - Research Protocol
    - NIDDM Patient Counselling Flowchart
    - Diabetes Information Checklists (10) + Facts Sheet
    - Patient Counselling Diaries (5) + Instructions
    - Sample of Patient Consent Form

2. Each pharmacist will keep the Diabetes Information Checklist handy in the dispensing area and will be offered to NIDDM patients who buy their medications from the pharmacy. It will be used to determine major areas of diabetes counselling and at the same time will be used as a means of recruiting patients to the study.

3. Each pharmacist will have to explain to the patient the nature of the study and the possible benefits derived from the counselling sessions. Participation is on a voluntary basis.

4. Each pharmacist should have a minimum of three (3) and a maximum of five (5) patients recruited for the study.

5. The name and phone number of patients who expressed interest in participating in the study, with their permission will have to be taken and passed on to Roger or left on his answering machine (62-262196).

6. A member of the NIDDM-PMC Research Team will set an appointment with the participating patient for a visit. The visit will involve the administration of a General Diabetes Knowledge Test, and the Patient Consent Form which is required by the University's Ethics Committee.

7. After the Patient Visit, the pharmacist will be given a report (posted by mail) about the visit and subsequently, can follow-up the patient for the first appointment date mutually convenient to both parties.

8. It is important to get as much information from the patient during the first appointment using the NIDDM Patient Counselling Diary. This will give the pharmacist an advantage in assessing needs and formulating intervention plan during a maximum duration of three months (approximately 3 meetings with a patient).

9. Follow-up appointments with a patient is necessary to determine additional patient's needs and to monitor progress of pharmacist's interventions.

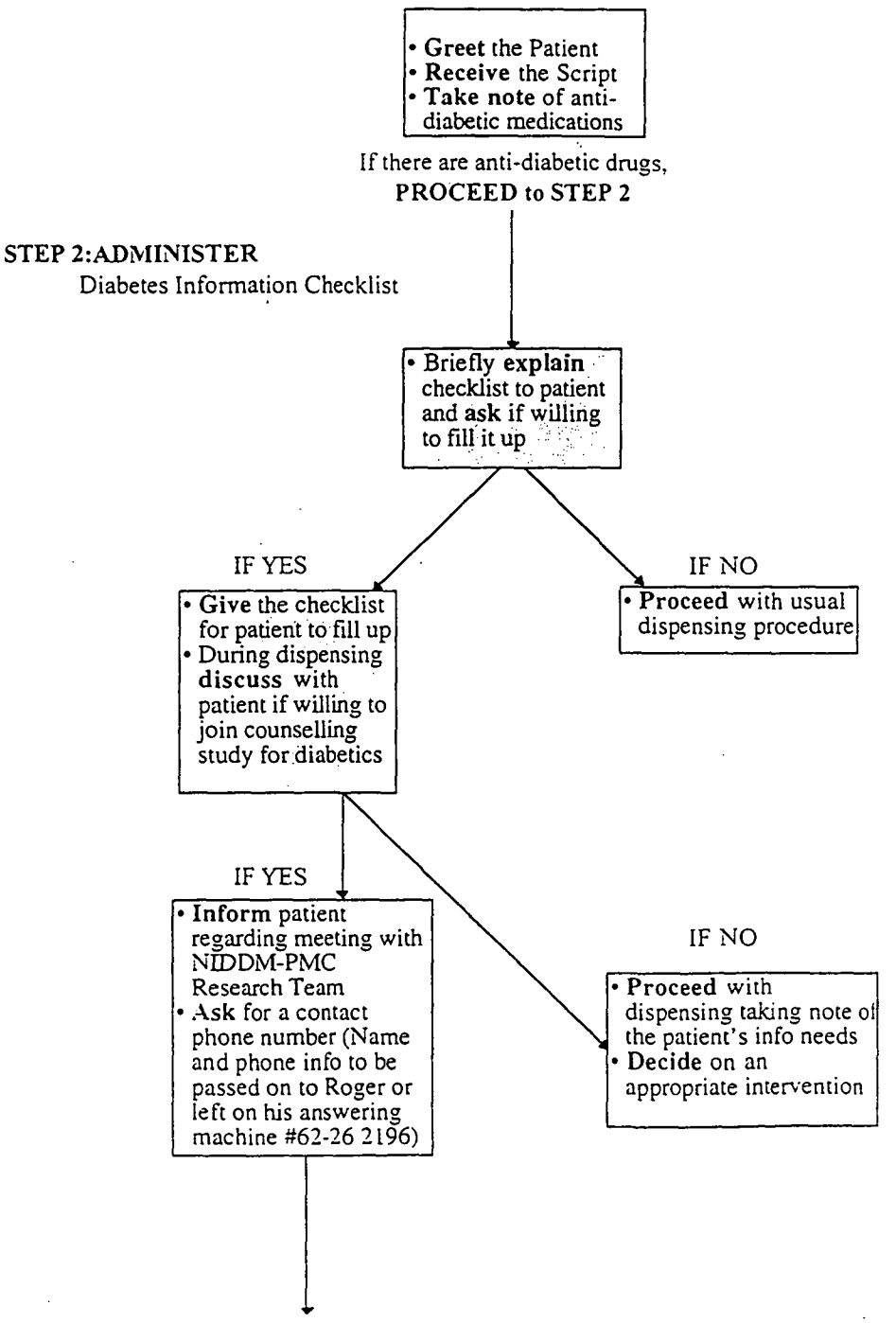
10. A member of the NIDDM-PMC Research may pay a visit to each pharmacist once a month, on an agreed date and time to discuss matters pertaining to the conduct of the study.

11. Feedback from participating pharmacists and patients regarding any aspect of the study is valuable. Feel free to contact Roger or Yollie (26-262190) during the duration of the study.

NIDDM Patient Counselling for Community Pharmacists

PHARMACY FLOWCHART

STEP 1:RECEIVE Prescription



STEP 3: START NIDDM Patient Counselling Diary with Patient

(This step to be started only after NIDDM-PMC Team provide Patient Visit Report)

- **Set appointment by phone** with patient regarding counselling

On Appointment Date

- **Go through** the personal information section
- **Also look** at the details in the diabetes management checklist pertaining to the areas specified by patient in the Diabetes Information Checklist
- **Plan on** appropriate intervention (See Suggested Pharmacist's Interventions in the diary in addition to your usual interventions)
- **Write** all important decisions/ interventions in specific space provided in the counselling diary

STEP 4:IMPLEMENT Intervention Plan

(Duration of implementation may vary according to kind of intervention)

Sample Intervention Plans

SAMPLE 1

Patient's Information Needs (refer to Diabetes Checklist)	Other NIDDM Management Deficit Areas	Assessment	Pharmacist's Interventions and Follow-ups (Include Dates)
Footcare long-standing NIDDM patient	Family history of hypertension	There is due reason for concern; bp rises occasionally; numbness of feet felt at times; might require a follow-up	13/4/97-Adviced the patient to a see a podiatrist and discussed the benefits of neurological assessment; gave practical tips on feet hygiene and precautions to take; was asked to consult

			meds
		bp under control; wasable to recall some of the tips I gave last time; require info on hypoglycemia	20/5/97- Was happy to know that she went to see a podiatrist; checked on her intake of medications, gave advice on hypoglycemia (will try to check her on this, next time)

SAMPLE 2: Mr Blackwell, 63 y/o, 2 yrs NIDDM

Patient's Information Needs (refer to Diabetes Checklist)	Other NIDDM Management Deficit Areas (refer to NIDDM Mgt Chk)	Assessment	Pharmacist's Interventions and Follow-ups (Include Dates)
What to do during sick days	person has flu for 3 days, dry cough; taking the usual dose of glybenclamide; didn't monitor blood glucose level	need to check blood sugar level and look out for signs of hyperglycemia; might require close monitoring if hyper; relief for dry cough needed;	5/5/97 -was recommended to buy blood glucose monitroing device and taught how to use it; syrup for cough syrup recommended; if blood glucose rises up to more than 7mmol/L, patient was asked to consult GP ASAP; if not hyper, continue on w/ meds and come back if any problem noted (will try to check out these aspects next time he comes for his meds)
	did not monitor his blood sugar regularly, thought it was only during flu; no problem w/ his medications	need to emphasise the benefits of regular BGM; might need to know about hypo.	3/6/97-discussed benefits of regular BGM; checked on his reading of BGM values; promised to do it regularly (check on this next time!); give him leaflet re:hypo and found that he knew about eating lollies when feeling dizzy and weakness after a long walk but didn't knew that it was hypo (the whole talk was good)

SAMPLE 3 Ms Greenworth, 45 y/o, newly diagnosed NIDDM (1 mo)

Patient's Information Needs (refer to Diabetes Checklist)	Other NIDDM Management Deficit Areas (refer to NIDDM Mgt Chk)	Assessment	Pharmacist's Interventions and Follow-ups (Include Dates)
ticked all aspects excepting medications	knowledge of diabetes, symptoms, nutrition, etc.	only know about what medications and when to take; might need a lot of information over a period of time; will work out a plan with her	12/5/97- worked out a twice a month (when she gets meds + then forthnight) meeting education session with her for three months; gave her written materials re: diabetes and nutrition and discuss about it briefly; her other questions regarding skipping meds was answered. (next meeting topic will be BGM , hypo and hyper)

NIDDM COUNSELLING UPDATE

The Newsletter for NIDDM Patient Counselling Research Group, TSoP

Volume 1 Issue 1 **June 1997**

The Importance of Documentation in Pharmacy Practice

Time and time again, the need to document pharmacists' interventions is emphasised in pharmacy practice research...

Our decade has witnessed the rapid transition in pharmacy practice orientation as a healthy response to changes in healthcare infrastructure and technology. Assessment of outcomes has become a by-word to justify various aspects of professional services. Patient counselling was no exception. The review of patient counselling research of pharmacists in the Western world has painted a sad picture of counselling as lacking improvement and for having no definite patient-related outcomes. This was despite the strong support for its value in practice, its mandatory implementation in the United States of America and almost two decades of clinical pharmacy practice. Are we really measuring the real outcomes or is this a case of looking only at one direct outcome, that of physiological control in our clients? Young (1996) admonished researchers to look closely into the language and methods used in the study of counselling.

Documentation, among others, will enable pharmacists, researchers, pharmacy bodies and the government to have a more realistic view of what pharmacists are actually providing in counselling, and how patients respond to this service. While direct outcomes such as blood pressure control and blood glucose control will always be a part of positive health outcomes for patients and which could be related to medication compliance, there could be other aspects of positive decision-making or behaviour which precede, accompany or reinforce patients' physiological control. In the case of diabetes patients, for example, several stages in their self-management were suggested to have occurred before they assumed basic routine behaviours. These behaviours are critical to their diabetes control.

Secondly, documentation will allow assessment of quality and quantity of information which lead to positive patient behaviours. Results of such assessment would identify components of counselling which could be incorporated into specialised counselling such as those for chronic conditions (e.g. asthma, diabetes). Thirdly, with the quality and quantity in place, then it would be easier for pharmacy bodies to approximate remuneration for their services guaranteed by positive patient outcomes from previous practice research.

In this NIDDM Patient Counselling project, we do not conform to the idea that patient counselling has not had previous beneficial impact on patients' positive health decision-making. Rather, it could be possible that some aspects of our counselling have been overlooked in our effort to relate our counselling to direct health outcomes. Through documenting all interventions a pharmacist may have taken up with the patient during the counselling session, we can relate outcomes to actual counselling. Referral to another health professional, purchase of a blood glucose meter or simply taking a non-prescription drug to alleviate side-effects of a medication are all positive aspects of counselling which we need to look at closely. However, the success of this project does not rely on the research methodology alone, it requires effort and time from all of us. Meanwhile, keep up the good work and be more involved!

HUSH...A SECRET FROM KEVIN

Kevin Morgan of South Hobart Pharmacy was able to recruit three NIDDM patients in the previous month and it is interesting to know how he did it. "I actually had a few people in mind while doing the NIDDM course and started to compile their names on a list. I put this list next to my working area as a reminder. When a person in the list visit my pharmacy, I inform him/her according to the following sequence:

- my involvement in helping diabetics in the community
- the NIDDM patient counselling project with the School of Pharmacy and other pharmacists

Inside This Issue

(Hush,...continued from p 1)

- the benefits of being in the project such as better understanding of their condition and
- ask them if they would like to join".

Kevin thinks that it is still possible to recruit more patients to the project but he will still find out whether he could really afford the time to do so. Currently, he only has one assistant with him in his daily practice.

NOTE: Yes, I agree with Kevin that the easiest way to start recruitment is with people you already know as NIDDMs. It can not be helped that when introducing this new aspect of practice, we have to first establish ourselves on our particular community then proceed further to entirely new territories (new patients). However, I also commend those who do not have a particular community but ventured into recruiting NIDDM patients as they come. *YR*

RHYS SAYS: "For busy pharmacists like me, it is important to remind ourselves about our involvement in the project by attaching the NIDDM Information Needs Checklist (green form) near the NIDDM medication shelf".

JANET SAYS: "I spend most of my working time for nursing home duties and so my time for counselling is rather limited. However, I meet NIDDM patients in the pharmacy and am hopeful to recruit and do counselling with them in a time convenient for both of us". (NOTE: At present, Janet was able to recruit two patients already at her workplace).

JANINE SAYS: "I came across a helpful booklet entitled, "Diabetes Management in General Practice" published by the Diabetes Australia with the Royal Australian College of General Practitioners. Looking at the content, the booklet would be helpful for our counselling and our understanding of NIDDM over-all management". (NOTE: We're still waiting for the result of my enquiry with the Diabetes Australia if we could order the booklet for our NIDDM pharmacists. We'll let you know about this. *YR*)

******PATIENT ENCOUNTERS OF A THIRD KIND*****

You can never say to Rhys and Nick that NIDDM Counselling is lifeless and lacking excitement...

- One day, RHYS used the NIDDM Information Needs Checklist (green form) with a patient to determine specific counselling needs. To his surprise, the patient ticked all aspects of counselling except that of medications. And so, he has to discuss with him a lot about other aspects of diabetes management which eventually led to his client's interest in buying a blood glucose meter. Additional income? Nope, because he advised the man to procure the meter from the Repatriation Hospital; Pharmaceutical Care? Yep, because his advice was instrumental to his positive decision-making.

- NICK, trying his best to recruit NIDDM patients one day in May, met this guy who happened to buy some anti-diabetic medications from his pharmacy. Armed with his knowledge on the subject, he introduced the patient counselling project to the person and tried to convince him of the benefits of it. Ironically, instead of replying, the man queried him,"What do you want to know about diabetes? Do you know about the latest diabetes treatment?" asked the man who described the treatment to Nick. LOOK OUT, dear pharmacists, you may have some diabetes experts disguised as patients...

****

PROJECT COUNTDOWN: It's been 2 months since the NIDDM-PMC Training and there are 6 patients recruited. Please make every effort to recruit more patients as soon as possible to give you flexible counselling schedules before the end of August. Other arrangements could be made with those who were not able to recruit patients during the last 2 months (ask YR).

Yollie may occasionally ask you for a visit to fish for more news and discuss any aspect of the patient counselling project. Please bear with her. Thanks.

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DSMM: What is it?

by Martha J. Price

Excerpts from an article entitled, "An Experiential Model of Learning Diabetes Self-Management", published in Qualitative Health Research, Vol 3, No 1 (February 1993). This is the first part of a series.

The literature on self-management in diabetes consists predominantly of investigations on compliance, behavioral modification techniques, assessment of health beliefs, and cognitive theories. Little systematic research has explored the actual experience of applying and adapting to a diabetes regimen.

Diabetes Self-Management Model (DSMM) depicts the fact that learning self-management occurs over time and has distinctive steps or sequences as a process model consisting of two phases, each of which has a stage within it. According to the study participants, the sequencing occurred in the following order:

PHASE 1: GETTING REGULATED	*PHASE 2: BEING REGULATED*
Stage 1 - Trying it out (receives prescribed regimen) Stage 2 - Figuring it out (modifies prescribed regimen) Stage 3 - Trial and Error (intensifies effort to find regimen "fit" and "what works for me") Stage 4 - Basic Routine (identifies patterns and a self-management regimen that "usually works for me")	Stage 4 - Basic Routine (continues) Stage 5 - Applies basic routine to new diabetes situations

PHASE 1 was interpreted to consist of the processes of "getting regulated"; during that period the person seeks a regimen or a basic routine that "works for me". PHASE 2 was identified as "being regulated"; the person applies behaviors and cognitive skills to *maintain* "what works for me". Maintenance of Phase 2 was found to be the basis for participants' extending their self-management routines to new situations. Phase 2 not only included a broader repertoire of self-management skills, but these skills were also characterized by a useful blend of diabetes theory and actual experience. This blending in Phase 2 is presumed to provide the flexible adaptation of diabetes self-management skills to multiple situations. The stages within Phases 1 and 2 are illustrated in Figure 1:

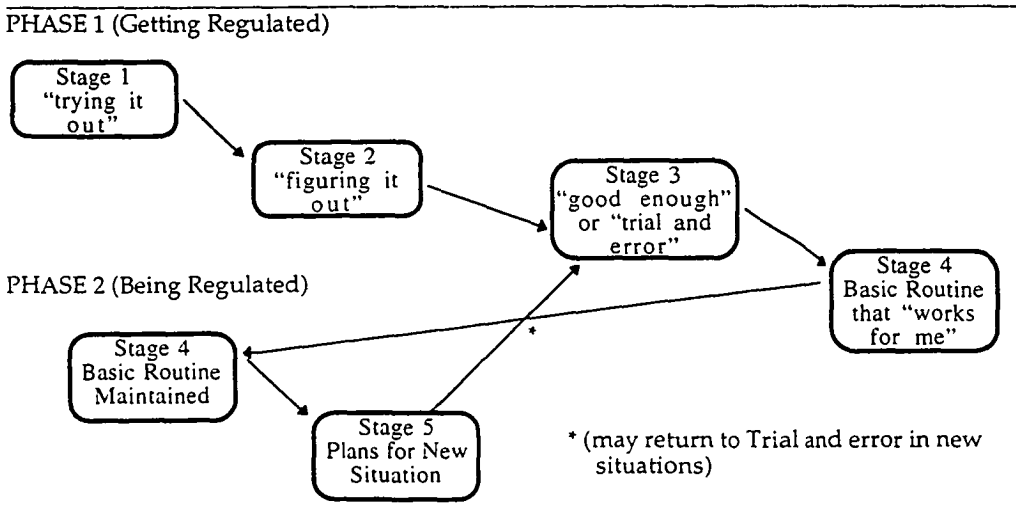


FIGURE 1: Diabetes Self-Management Model (DSMM)

to be continued...

NIDDM COUNSELLING UPDATE

The Newsletter for NIDDM Patient Counselling Research Group, TSoP

Volume 1 Issue 2 **July 1997**

Diabetic Clients in the Community

Are you wondering why diabetics do not always seek help regarding their health condition?

The past week has been designated "Diabetes Awareness Week" and perhaps most of you have watched the "60 Minutes" program on this topic. The celebrities who were interviewed in the program emphasised the debilitating effects of uncontrolled diabetes and had given viewers an insight as to how they manage their conditions. Greater control seems to be achieved by those who are capable of self-management, an ability which has been associated, to a greater degree, to patient attributes such as perceived cognitive and physical abilities, available resources (time, money, social support), general education level and the amount and type of diabetes education. It was reported in a study that many diabetic patients "listen" to their bodies in a continuous process during waking hours and was associated with varying degrees of cognitive awareness. This awareness is further affected, intensified or reduced by the presence of or absence of physical cues and whether or not the physical sensations were perceived to be diabetes-related (Price 1993).

Information-seeking behaviour of these patients is also influenced by such awareness. In our 1996 study of 50 Tasmanian NIDDMs from the RHH who were admitted for various health reasons, patients were asked whether they would still need more information about diabetes. Samples of statement gathered were:

- "I know all about diabetes. I just go to the doctor only when necessary, that is when my condition deteriorates."
- "I only go to the GP when I wanted him. Any form of information (verbal, written) will do because how they will work will really depend on me."
- "It's never enough." (referring to her knowledge about diabetes)
- "Diabetes is not part of my life. It does not bother me at all. I don't want to know anything about it."
- "There are always things to learn. I ask for more information because the 'squeaking wheel gets the oil.' Information helps and we go to places where we could get it."
- "Information is helpful because it helps patients make choices or decisions. I'm happy that there is more information now to help patients make decisions."

In this study, it was observed that (1) some patients who were able to manage by themselves still seek information support when they perceive their condition gets out of hand, (2) some patients have a consistent desire to learn despite what they already know, (3) many patients realise that they have a role in managing their health, (4) majority of patients expressed positive views about benefits of information and (5) there are individuals who deny their diabetes and therefore, do not act to seek or accept information about it.

These patients are examples of individuals that may visit your pharmacy. Each individual will present his/her case differently and may require the effective use of our communication skills.

Inside This Issue

TRAINING OUTCOMES PART 1 - Very good results!

Except for two more sets of forms, submitted written evaluation forms (diabetes knowledge quiz, effective communication quiz, NIDDM case scenarios and the FIRO-B test) were already analysed. Pharmacists' performance on diabetes knowledge showed a substantial improvement in knowledge. The pre-test in itself showed a fairly knowledgeable group of pharmacists. There was also a marked improvement in the handling of NIDDM case scenarios. A gradual switch from the usual factual information exchange to the use of active listening skills was evident in the statements written by some pharmacists. This has to be further validated by the videotapes of counselling, the analysis of which is soon to follow. The immediate educational outcomes of the training have been encouraging. CONGRATULATIONS!

TRAINING OUTCOMES PART 2 - Have you met NIDDM patients lately?

Our next focus of attention is the actual provision of NIDDM counselling in the community where we practice. We have 7 patients on the list in June but not all of them returned the diabetes questionnaires that we sent. Two of these patients will also be away for their holidays. Thus, it is even more necessary for pharmacists to make new contacts or follow-up and/or remind potential counsellees who were already spoken to regarding our counselling program. **(Please become active in this area. It is important to document that pharmacists can make a difference and to support Yollie's thesis, too! R.H.R.)**

The task of involving patients is not easy even when we are only looking at one specific group of patients, the diabetics. You may have also noticed that patients themselves have different priorities and approaches in handling their conditions. Somehow, you could say that quality counselling is a result of mutual concern between us and our patients . However, please take advantage of this opportunity to practice counselling using this diabetes care approach, as future trends direct our increased involvement in patient care.

The nature of employment also seems to influence the amount of involvement in patient counselling. As I have mentioned to some of you, informal counselling with friends, relatives and patients either during off-hours or on the telephone could be utilised for the purpose of a counselling experience under the managed care approach. As workplace provisions are not yet in place for this type of counselling, we can devise personal, practical ways of carrying out our roles. One beauty of being in a practice research group is its characteristic search for new workable methods and new ways of handling problems encountered in pharmacy practice.

Dear pharmacists, please watch out for NIDDM patients and try your counselling skills. A report on actual patient counselling will be made at the end of this project, probably by October this year.

NIDDM forms are now recognised with increasing frequency among children and adolescents. Several sub-types can occur in childhood and involve different pathophysiologic mechanisms. Defects in sensing of serum glucose concentrations, abnormalities in insulin secretion, insulin resistance in target tissues and secretion of abnormal insulin molecules can result in the common endpoint of NIDDM. Because NIDDM patients are frequently asymptomatic for prolonged periods of time, recognition of these disorders and screening of individuals in high risk groups is important. **(Pediatrics Clinics of North America 44(2):307 (April 1997)**

The optimal goal of blood pressure control in diabetes has not been established but there are indications that it should be lower than the 130/85 mmHg systolic/diastolic recommended by current guidelines. In the presence of multiple risk factors, most guidelines suggest a threshold for intervention of greater than or equal to 140 mmHg. **(Journal of Hypertension 15(Suppl 2):s63-s69 (March 1997)**

We have to thank **Merck Sharp and Dome (MSD) Research Foundation** for its financial support of the NIDDM Patient Counselling Training Program for Community Pharmacists.

Since **we are still lacking** sufficient number of patients for NIDDM counselling at the workplace, we have decided to give you more time to recruit your patients. Instead of August 30, we have moved the deadline of recruitment to **September 30.**

(continued in page 3)

(Continued from p 3)
Please be reminded that by **early September**, we will be sending out again a set of evaluation questionnaires (diabetes knowledge quiz, effective communication quiz and the case scenarios) but **not** including FIRO-B and the program evaluation. Please bear with this one again (I assure you it's the last written set). Thanks.

DSMM: What is it? Part 2 — by Martha J. Price

Excerpts from an article entitled, "An Experiential Model of Learning Diabetes Self-Management", published in Qualitative Health Research, Vol 3, No 1 (February 1993). This is the **second part** of a series.

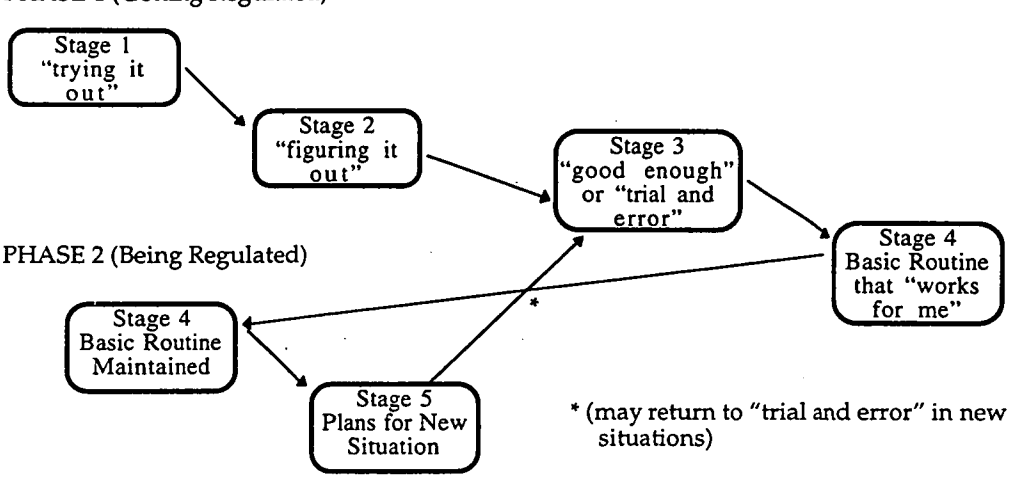


FIGURE 1: Diabetes Self-Management Model (DSMM)

Phase 1: Getting Regulated

Stage 1: Trying it Out. The first stage of the self-management process when diabetes mellitus is diagnosed and the individual receives a prescription for treatment. Regardless of whether or not the person was initially hospitalised for diabetes management, the person returns to the home environment where the first experience of one of having to carry out the treatment regimen alone. This stage is called "trying it out". Stage 1 was described by the study participants as having rigid adherence to the prescribed regimen. This adherence usually takes the form of eating exactly what was prescribed at the specified times and taking only the prescribed amount of medication at specified times. The length of time spent in Stage 1 varied with individual informants, with reports of a range from 2 weeks to 1 year. Two principal conditions prompted informants to move out of this stage: *lifestyle disruption* and experience of *negative body responses*. Either way, the person was likely to proceed to Stage 2.

Stage 2: Figuring it Out. This begins when an individual began making modifications to his or her prescribed management regimen. Individuals made modifications either to make their regimens more compatible with their daily schedules or to ameliorate untoward, and often frightening, body responses. Sometimes, it was a combination of both. The first change, which all informants reported occurred in the area of diet. All participants identified food as the "safest" modification to make on their own. This stage of "figuring out" was the first attempt at adding some flexibility to the prescribed regimen and each small change was accompanied by a heightened awareness of any physical effects it might produce. Most of the study participants described making a modification by saying "Since it didn't kill me, I decided it was probably OK" or "I tried it, and I didn't die".

(continued in p 4)

(Continued from p 3)

As with Stage 1, the time spent by participants in Stage 2 varied. Whether they continued the modifications or attempted additional modifications depended, first, on physical outcomes and second, on whether they could continue their preferred lifestyles with minimal disruption. Individuals varied in experiences of consequences or outcomes. For 17 of the participants, the outcomes was to move away from Stage 2 because they experienced adverse physical effects or unwanted effects on their lifestyles.

Either outcome had prompted these individuals to seek a better "fit" between themselves and the management regimen. Those individuals then, moved into Stage 3, "trial and error", where they intensified their efforts to find "what works for me".

Stage 3: Trial and Error. Intensification of self-management efforts toward finding "what works for me" was the hallmark of Stage 3. Identified as "trial and error", the activities of this stage were beyond occasional adjustments or minor modifications. If the modifications made in Stage 2 did not bring about coherence and a "fit" with lifestyle patterns or a sufficient sense of well-being, study subjects reported that they intensified their efforts to find a regiment that would work. To do this, they experimented with the effects of foods, activities, and circumstances, such as stressful situations, on their blood glucose.

Of all the stages, Stage 3 was interpreted to be the most critical in achieving a routine that "works for me". This stage required frequent glucose monitoring and a great deal of sleuthing to determine what would send the glucose numbers up and down. Stage 3 also required recognising patterns of glucose responses and associated physical perceptions. Pattern recognition became a significant variable in determining whether the study participants could move to Stage 3 and find out "what works for me". Informants also reported that they were motivated to seek additional diabetes information partly because they needed to understand their own body response patterns or lack of same.

Stage 4: Basic Routine. In Stage 4, majority of the study participants described being able to establish a basic routine in which they could place confidence and begin to identify "what usually works for me". Hallmark characteristics of a successful Stage 4 are best described as a recognition of diabetes response patterns and confidence in and reliability of "what works for me". A basic routine "that works for me" and is predicated on experiencing Stage 3 provides the basis for moving into Phase 2, Being Regulated.

Three variations of how one might establish a basic routine were identified:

1. Stage 2 to Stage 3 to Stage 4 --- A basic routine is described as "what usually works for me" and is predicated on the intense trial and error (Stage 3), recognized personal response patterns, and factors known to affect glucose control (food, medication, activity levels and stress).
2. Moving from Stage 2 directly into Stage 4 --- A basic routine is founded on minimal modifications of the prescribed treatment plan and is perceived to have few, if any, negative physical effects and does not disrupt the individual's preferred lifestyle.
3. Stage 2 to Stage 3 --- A management style identified in Stage 3 as "good enough" could also be considered a basic routine. It is, however, a variant of the outcome of Stage 3 and not a true Stage 4.

PHASE 2: BEING REGULATED

In phase 2, Stage 4 continues with the distinction that the individual maintaining the basic routine over time and attains a greater degree of self-management flexibility. For example, if exercise plans change. the individual can work out the exercise into another time of the day or use other aspects of management to compensate for the change. There is also a suggestion of what might be a Stage 5, in which informants report being able to apply their basic routine to new situations, such as travel, illness, or change in work schedule. To adapt to new situations, activities are now supported by the basic routine and are more focused on the new situation rather than on developing generic diabetes self-management.

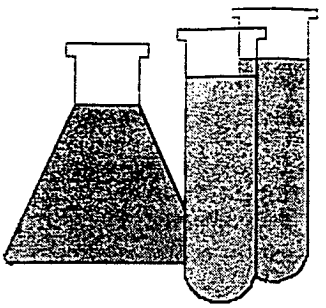
Of the 18 people interviewed, approximately 7 managed from this position all of the time. They indicated that their theoretical knowledge of diabetes management was adequate, and their understanding of how their bodies responded to the treatment regimen within a variety of situations was exquisite. Their data revealed a complexity of self-management that was characterised by confidence and flexibility. As one informant described it, "I may not know what to expect, but I trust myself to be able to handle it."

... to be continued

NIDDM COUNSELLING UPDATE

The Newsletter for NIDDM Patient Counselling Research Group, TSoP

Volume 1 Issue 3 **October 1997**



Acarbose: New Hypoglycaemic Drug

Acarbose (Glucobay - Bayer)
This is a new agent for the treatment of diabetes.
PBS as of 1st November 1997.

Pharmacology and Place in therapy.

Acarbose is an α-glucosidase inhibitor.
Dietary monosaccharides such as glucose, fructose and galactose are absorbed directly. Dietary carbohydrates are mainly di-, oligo- and poly-saccharides. These sugars must be enzymatically converted to monosaccharides by amylases and other α-glucosidases before they can be absorbed. Amylases are excreted by the pancreas and the other a-glucosidases are present in the brush border of the small intestine.

Acarbose is a complex oligosaccharide of microbial origin which has a high affinity for pancreatic amylase and the α-glucosidases. Taken at the beginning of a meal, it interferes with the hydrolysis of dietary disaccharides and complex carbohydrates, delaying the absorption of glucose and other monosaccharides. Systemic absorption of acarbose itself is only about 1% of the dose.

Acarbose lowers post-prandial blood glucose by about 20% when used in conjunction with and appropriate diabetic diet. It provides similar improvements when added to existing therapy in patients with NIDDM that was poorly controlled by sulphonylureas. It also has some benefits in IDDM patients. By itself it does not cause hypoglycaemia Its use doesn't result in weight loss.

Overall, blood glucose control, and particularly post-prandial hyperglycaemia, is improved in most patients. Insulin doses may be reduced and sulphonylurea effectiveness prolonged.

Indications

As an adjunct to prescribed diet and exercise for the management of blood glucose concentrations in NIDDM patients who are inadequately controlled by diet alone or by diet plus oral hypoglycaemic agents.

Pharmacokinetics

Only 1-2% is absorbed. It is metabolised exclusively in the GI tract principally by intestinal bacteria but also by digestive enzymes. About a third of the dose is absorbed as metabolites and these are excreted in the urine. About 50% of the dose is excreted in the faeces.

(continued next page...)

Inside This Issue

(...Acarbose from page 1)

Warnings, contraindications

Contraindications include:

- hypersensitivity, pregnancy and lactation and age less than 18 years.
- severe renal impairment
- GI disorders such as malabsorption, inflammatory bowels disorders

Precautions

- Elevated serum transaminase levels have been observed in some patients especially on higher doses (> 300mg/day). These effects are usually asymptomatic and reversible.

Common side effects

Unabsorbed carbohydrates undergo fermentation in the colon, leading to dose-dependent flatulence, cramps, abdominal distension, diarrhoea. These effects tend to diminish with time. These effects can be reduced by good diet, especially reduction in sucrose intake

May decrease intestinal absorption of iron and cause anaemia

Drug Interactions

Cholestyramine and intestinal absorbents e.g. charcoal.
Oral pancreatic enzymes
May increase risk of hypoglycaemia when added to sulphonylureas or metformin
May reduce bioavailability of metformin by 35%

Dosing

Must be taken at the beginning of a meal to be effective.
Start low and increase gradually.
50mg once a day for first week then 50mg BD for 1 week then 50mg TDS for 1 week onwards. Dose increases after 4- 8 weeks on basis of blood glucose.
Average adult dose: 100mg TDS. May use 200mg TDS.

Counselling

Take at the beginning of a meal
Maintain good diet, especially one high in complex carbohydrates. Sugar intake may worsen GI effects.
(from Dr. Roger Rumble, Tasmanian School of Pharmacy)

TRAINING OUTCOMES PART 3 - Ratings of Videotaped Scenarios

Two counsellors from the Counselling Department of the Centre for Education performed the analysis of the videotaped scenarios and had objectively rated them on the basis of four group of skills: attending and active listening skills, emphatic responding, interviewing and influencing skills.

Results showed that there was an increase from the pre-intervention to the post-intervention scores in the first two set of skills. There was no evident change in the interviewing skills as most of you emerged good interviewers in both instances. As for the influencing skills, the slight dip in the scores was attributed to observed lack of summary or direction in some of the scenarios. However, there were a lot of good comments for specific commendable skills in emphatic responding and

(continued next page...)

(...Training outcomes from page 2)

interviewing skills. All of you did well in attending and active listening, while some have to improve in emphatic listening. The experience was something of an 'eye-opener' for the raters who admitted that they did not expect that a pharmacist has to attend and listen to other concerns of the patients besides medicines.

A NOTE OF THANKS

I want to thank all the ten pharmacists - Kevin, Janet, Rhys, Helen, Janine, Therese, Deborah, Jenny, Nick and David who participated in the training program and in its workplace evaluation. Thank you for your time and for trying out innovations for improving our patient counselling services to NIDDM patients in the community. From your experiences, I will be able to gather important information on issues limiting the provision of individualised care for this group of patients and somehow reflect this on my written work.

Some of you have expressed concern about the lack of patients recruited for the study but again let me assure you that there was no harm done. It was my idea not to impose the recruitment in as much as it will introduce the bias of compliance. What we have envisioned during the planning of the training program evaluation is to come up with a documentable patient counselling system that may be compatible with your work setting. However, we could see from the implementation result that there is a lot to be done prior to realising individualised care and that you really need a continuing support from a dedicated group in the profession which have to oversee the individual needs of pharmacies. However, let me thank you again for letting us become a part of your practice, what we have learned about your practice needs have not been possible without your co-operation. I wish you the best in your professional practice. – YRR

REMINDER

Please remember to send back the completed diabetes knowledge quiz, communication quiz and the 'communicating with patients' answer sheet as soon as possible. The tally cards will be collected by Yollie during her last visit to your pharmacy same time with her taped interviews with you. Thanks again.

DSMM: What is it? Part 3 by Martha J. Price

The Four Principal Factors

The core category of self-management among diabetics comprised four major categories: personal considerations, monitoring skills, cognitive skills and control.

Factor 1: Personal Considerations. The first factor encompasses these components of personal preference and personal logic or reasoning that can modify learning and management choices. They include perceived cognitive and physical abilities, available resources (time, money, social support), and general education level as well as the amount and type of diabetes education. The perceived existential is also an important component of this factor. As these components were inferred from the data, this is probably not an exhaustive list for this factor. The primary function of Factor 1 appears to be to provide background to the other three factors. Of the four factors, Personal Considerations consistently predominated throughout the DSMM. Only in Stage 1 did the participants put personal preferences aside in order to try to follow the prescribed plan. Thereafter, they targeted their self-management efforts towards a 'fit' with their preferred lifestyle and perceived selves.

Factor 2. Monitoring. In diabetes management, *monitoring* commonly refers to testing blood glucose levels; however, the informants in this study indicated they routinely used four types of monitoring: *blood testing*, which is an objective, episodic testing of one's own blood for glucose; *body listening*, which is completely internal and subjective and involves specific awareness (vague or fully conscious) of how

one feels physically and 'diabetically'; *secondary monitoring by others*, which is diabetes management information requested of or offered by others (family, friends, co-workers); and *secondary monitoring by the health care professional*, which is solicited, episodic information given by the health care provider.

At the time of diagnosis (Stage 1), they paid the most attention to secondary monitoring from health providers and significant others. They described these secondary sources as powerful influence; yet in the later stages, if and when they had more confidence in "what works for me", they screened information offered by others through their basic routines. Secondary monitoring continued into Stage 2 but gave way to increased use of body listening and blood testing in Stages 3 and 4.

Factor 3: Cognitive Skills. Self-management decisions could not be made and executed without the ability to solve problems and evaluate actions and outcomes, or what we termed *cognitive skills*. Participants identified these skills as *planning, pinpointing, and plotting*. They described their development of all three cognitive skills as being dependent on their recognising diabetes patterns. Planning is initiated when they receive a treatment prescription or plan from the physician. In Stage 2, they modify the prescribed the prescribed plan to accommodate personal considerations. Once they have made these modifications, they employ the next cognitive skill, *pinpointing*. This involves being able to recognise the outcome of any activity on the basis of experienced physical symptoms , e.g. hyperglycemia as a product of eating fatty food.

With the skills of planning and pinpointing, the individual has some idea how to *plot* ahead for new diabetes situations, such as travel or a change in a daily work schedule. Obviously, these skills develop over time and are directly dependent on having a variety of diabetes experiences.

Factor 4: Control. Like the monitoring, *control* was the most often described as blood glucose control. All participants talked about blood glucose control, but they also indicated that control at least has three definitions, depending on where they are in the self-management process. One definition is status, which is specific blood glucose value or range. In the later stage of self-management, they described control as a *process*, an ongoing set of activities to be continually performed in order to have diabetes control. Thus, in the later stages, a stated glucose number would be insufficient to description of diabetes control. It would also be important to describe the specific processes used to arrive at that particular glucose value.

By Stage 4, and certainly in Phase 2, control was further explained as a *choice*. By choice, the participants meant they could choose their glucose range (values) and the activities (process) by which they preferred to reach that range.

CONCLUSION

Data from this study provide evidence of a patient-centred self-management model based on the practical knowledge that comes from actually living a diabetes regimen. The DSMM model further suggests that people learn to self-manage diabetes by learning to recognise patterns of their own responses (biopsychosocial) to diabetes, and that they use this information to formulate a diabetes self-management plan that "works for me". The basic routine that "works for me" may not be one grounded in theoretical principles of diabetes management, however, it is established on personal logic and individual experience.

"It is better to be prepared for an opportunity and not have one than to have an opportunity and not be prepared." *Whitney Young, Jr.*

Appendix 10

Case Studies

10.1	Waratah
10.2	Myrtle
10.3	Boronia
10.4	Correa
10.5	Heath
10.6	Sassafrass
10.7	Scoparia
10.8	Iris
10.9	Hibertia
10.10	Wattle

Case Study 1

Personal Profile

Code name	WARATAH
Age	57 y/o
Gender	Male
Years in Practice	40 years
Position	Owner/manager
Average working hours per week	50 hours
Average number of prescriptions dispensed per day	75

Description of Pharmacy:

- He had one assistant in the pharmacy
- It was a suburban pharmacy
- The pharmacist was familiar with the people in the neighbourhood

First visit: June 1997

Waratah was quite enthusiastic about the idea of doing more counselling for NIDDM patients. He had a few regular patients in mind and believed that "it is good to start with people you know". What he did was to compile a list of NIDDMs who regularly visit his pharmacy. Then when he had the chance, he informed some of these patients about his involvement in helping NIDDM patients. He also informed them about the project in counselling supported by the School of Pharmacy and explained to them the benefits of being in the project such as the better understanding of their condition. Then he asked them whether they would like to join. Three patients agreed to participate and were given the 'informed consent form' which they had to post to the researcher who, in turn, would contact them by phone and send them the 'patient knowledge test' (PKT). He was thinking of recruiting some more patients but he was also concerned that he could not handle the demand as he only had one assistant.

Second visit: August 1997

Although Waratah was able to recruit three patients for his NIDDM patient counselling kit, he was not able to use the content of the patient kit. There were also some problems with the patients he had recruited. Patient X had not been around and his wife had always collected the medicine for him. Patient Y, also an asthmatic, also had her medications collected by somebody else and Patient Z had gone overseas. He has positive response to the tally card because he could not use the NIDDM checklist as part of his general counselling. He said that he needed more guidance with the use of the NIDDM patient counselling kit. He still considers himself highly motivated to do counselling for diabetics and mentioned that he had become more aware of the difficulties these patients have to deal with.

Third Visit: October 1997

Excerpt from the audio-taped interview:

1. Work, in terms of being 'busy'

"...very busy talking to patients about their medications, dispense some scripts and counselling to people how they can best use their medications and also mainly talking to people who call on the pharmacy for advice on health problems, prescription and non-prescription and it is very constant all day and it is difficult to find any length of time to spend with any particular person and so most of the counselling done is a 1-2 minute break which is usually sufficient for the type of counselling that's being done"

2. Counselling role of a pharmacist

"...very important role for patients who have their medications...obviously people do not have information how to take their medications, the doctor does not always necessarily give them a lot of information and it comes back to us to give that info...patients should have the knowledge to do that so we need to spend a bit of time with them...first time [newly-diagnosed] spend more time with them...mainly talking about the medication given the CPI info and go through with them on the important points...we give them the self-care card, eg. on blood pressure...also makes the patient more confident with it if they know more about what's going on"

3. Feedback about counselling

"Many, many people say that they appreciate the time we spent with them and the info we've given...quite often, people will say, 'thanks very much for spending your time', 'thanks very much for pointing that out to me' and they come after two weeks and they repeat that 'I appreciate the way you always tell me about how to take my medication properly...we do get a lot of that...it is very satisfying professionally and it will make you feel better spending time with them"

4. Barriers to NIDDM counselling in the last 6 months

- "The biggest problem I suppose was not being able to allocate uninterrupted time, to have the time to be able to talk to people and to discuss the diabetes with them and to discuss what they're doing and to be able to make notes about that...in the way the pharmacy is *set up* at the moment, it is really extremely difficult to do that"

- "In the same way, even trying to document what we're doing...it would be good to be able to document that but we're not set up properly to do it and included in that, too, this diabetes ...the public are not conditioned to spending time in documenting the discussion...I think, it is probably getting closer but still, it is difficult...we have to have a list in front of us and we have to go through the list with them, talking about the different aspects of it but I do not see any way out of that really and we have to make the notes as we go because if we left it for a few minutes then, we'd probably forget some of the things that I've said and of course, in the pharmacy again, straight away, somebody else will come with a prescription and so we have to make notes at that time in front of the

person and I think that this is the problem of having the place to do it and the time to do it...It is a process...all these things help and I'm thinking now all the time, how can I do this, do that...I was thinking the other day how to document discussion with patients about OTC meds"

- "We have to have somewhere where we could do it - semi-private counselling area and we'll have the opportunity without being distracted"

5. Usefulness of training program

"Having been involved in this counselling project, it certainly raised my awareness of the things we need to talk to, to the diabetes patients...talking about their feet and their eyes, seeing that they're being tested and followed-up and their diet...it has raised that awareness...the education part of the program is very useful so I certainly found the training program very useful, the diabetes knowledge and actual counselling skill, too...it was not easy to subject yourself to that [videotaped counselling] but it was done in a very easy way...I think the way it was done on video was made easy for us and it would be good if other pharmacists would have the opportunity to be able to see themselves as others see them"

6. Training program improvement

"...some discussions on how were going to go about the counselling of the NIDDM patients, keeping in mind the problems that I've mentioned before or to discuss as a group how we were going to do it and we all have different ways to do it and different suggestions...and possibly it might have helped to have met again and we have to wait say, until June just get together once and talk about how we will be applying the knowledge in counselling, the NIDDM patients in particular, and how we are making the time and so on. That would have highlighted some problems probably and maybe have helped some people"

Case Study 2

Personal Profile

Code name	MYRTLE
Age	56 y/o
Gender	Male
Years in Practice	35 years
Position	Owner/manager
Average working hours per week	48 + hours
Average number of prescriptions dispensed per day	150

Description of Pharmacy:

- He had two assistants in the pharmacy
- It was a pharmacy outside a shopping centre and there was another pharmacy inside the shopping centre

First visit: June 1997

On holiday

Second visit: August 1997

He discussed about how he had approached 2 NIDDM patients for the purpose of recruiting them for the counselling project. One wanted nothing to do with it because she could manage on her own and she knows what to do. The other one was a different case. She would not even follow what the doctor says and enjoys life cooking good food. She came from an Eastern European background. The pharmacist said that he could not find time to do structured counselling because of manpower. He was the only pharmacist in charge of the prescriptions and the two assistants helped in the store. He said that it would require more prescription turnover for him to be able to hire another pharmacist. Before, he used to have pharmacy students (trainees) and he had to pay them plus they required a lot of supervision. The other pharmacy inside the shopping mall had more pharmacists since people buy there for convenience. His pharmacy used to be 50% prescription but now, 80%. He might try using the tally card in his counselling. He said that if his pharmacy was similar to the other pharmacy, then he could hire another pharmacist. He also mentioned that patients equate service with efficient dispensing more than with the provision of counselling.

Third visit: November 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"It is very busy because I'm the only one on site also administrative tasks which requires paperwork, I've been signing documents by people which is probably 2-3 days sometimes more, sometimes less and I do have 2 girls who operate the shop

and they know how to work in the dispensary and the computer and everything they do has to be checked...we have 150 scripts a day...not big enough to justify having another pharmacist on site and more than enough to keep me occupied so then there's counselling in relation with prescriptions...and quite often Mondays, there's babies in the shop and health...it can be busy"

2. Counselling role of a pharmacist

"It think it is essential that we get more involved and the public realises it is part of our life...we need more background in particular the older ones, the younger pharmacists come though very well trained than our lot...I've been going to courses and then finally I slipped in behind...life with NIDDM might need probably 2 to 3 days background...another thing is how the public perceive us...some people just don't want to know, they just want to be in and out, they feel they know and the doctor had told them enough but they are the ones who have practically defective patient compliance"

3. Feedback about counselling

"Not a great deal, I've always been working...I don't think there's a great deal of response in this area, I think the actual feedback was how quickly we could get through prescriptions so that they could come and go rather than what extra services we give...if they do have any comments, I would suspect that it is passed within the community or to other people rather than directly through me...I feel good...I think it all helps...the negative feedback is totally unrelated to that [counselling]"

4. Barriers to NIDDM counselling in the last 6 months

- "[If] people are prepared to stop, listen and act on some of the things you've suggested...a lot of them are so xxxx minded, they will continue a long way ignoring what you said...it is much the same with NIDDM patients who just don't care as long as they get their medicines"

- "I'm a sole pharmacist...I do not have [time] to devote to any discussion...I'm not just talking about NIDDM but also of other counselling...if it cropped up 10 minutes or more, in the meantime, people tend to get annoyed for having to wait and wait and by the time you're halfway through the conversation, the prescription has to be checked by the girls...to do counselling properly, I think you need two pharmacists, in a business, you have to be doing a minimum of 200 scripts per day... I have not quite got the time and the people are not that interested"

5. Usefulness of training program

"The training program has given me some background information which I was not conversant with...I need to go back to my lecture notes to refresh my memory...I have not done that"

6. Training program improvement

"The endocrinologist was good...the podiatrist and the two girls were fabulous...I think that's the highlight of the program...I think that can be expanded from what it was"

Case Study 3

Personal Profile

Code name	BORONIA
Age	49 y/o
Gender	Female
Years in Practice	27 years
Position	Owner/manager
Average working hours per week	50 hours
Average number of prescriptions dispensed per day	50-100

Description of Pharmacy:

- She had one or two assistants in the pharmacy
- It was a suburban pharmacy situated close to a doctor's surgery
- The pharmacy also provided alternate medicines including its compounding
- The pharmacist was familiar with the people in the neighbourhood

First visit: June 1997

She was wondering why during the time of the training, there were many new NIDDM patients who visited her pharmacy but there were fewer at present. She mentioned talking to a retired doctor about diabetes and the doctor advised her to get hold of a booklet entitled "Diabetes Management in General Practice". She had a problem with documenting her counselling. She said that she liked to give advice but found it hard to give time to use the NIDDM patient counselling kit. However, she kept it near the dispensing area in case she need it.

Second visit: August 1997

She told a story about a lady whom she presumed to be a NIDDM but was not yet diagnosed as such. She advised her to see another doctor instead of her present doctor and from that, was found out to be a NIDDM. She said that while she found it hard to do structured counselling such as the use of the kit, she saw to it that employees under her were counselling in the right manner (and she checked on them, too). Yes, she might try to use the tally card. She said that 'time' should be considered when doing counselling.

Third visit: October 1997

Excerpts from audio-taped interview

1. Work, in terms of being 'busy'

"We're not as busy as a city pharmacy, we do not have great surges, we dispense somewhere between 50-100 scripts a day which sometimes is not very high but I've got job satisfaction and got enough time to talk to people and we do a lot of lifestyle, supplement and alternate counselling...it is a mixture, it is a one woman's show and two assistants...basically, I have to do the admin...I do not do the

money...I let somebody else to do it... but motivation, promotion, etc rest with me...our business is quite different and we use a very relaxed approach style...if possible greet patients by their first names...I know what medicines they are taking, more than names"

2. Counselling role of a pharmacist

"I hate to admit it but sometimes it depends upon your mood and your day for being outgoing...I'll endeavour if anyone's on anything new to give them a guideline and to make sure that they know what they're taking and why they're taking it because some of our dear colleague GPs do not explain what they should be doing with their medications...I have been known to lend an old PP Guide to those who are interested to read about it...I think that when the patients got the knowledge then the patient will participate in taking the medication routine and as prescribed"

3. Feedback about counselling

"They [patients] do not really give a lot of feedback but if you asked them, if you fish, you'll get it...they tend to give negative comments sometimes like, 'you forget to tell me that I will get diarrhoea'...if you tell everybody about the side effects, they get worried...I tell them, if you have any problem, give me a ring...negative feedback is good, it takes 10x another effort to get a new customer than to maintain one...negative feedback, you can work on that"

4. Barriers to NIDDM counselling in the last 6 months

- "The doctor got enthusiastic on time [about NIDDM] and so, he beat me to it [patient counselling] but I think I'm more consistent than he is"
- "Main barrier for me is keeping records...I like that to be done but we follow on quite well"

5. Usefulness of training program

"My knowledge of physiology and diagnostics is not huge or was not, I think it has improved and I think that it helped me with patients and with the staff...I have applied it...every time one of us [she and the staff] has to go on a training course, we try to have half an hour within two days of the training course where the person who went has to tell the rest of the staff what it is about...that gives me and some of the staff some ideas...got on board...they gained as well"

6. Training program improvement

"Nothing more...the info is really good...although I find the counselling training a bit laborious because I had previous counselling training"

Case Study 4

Personal Profile

Code name	CORREA
Age	48 y/o
Gender	Female
Years in Practice	26 years
Position	Employed pharmacist
Average working hours per Week	38 hours
Average number of prescriptions dispensed per day	100

Description of Pharmacy:

- The pharmacy was located at the city centre
- There were more than two assistants
- The pharmacist not as familiar with the customers as the suburban pharmacist

First visit: June 1997

"I spend most of my working time preparing medications for three nursing homes and so my time for counselling is rather limited. However, I meet NIDDM patients in the pharmacy and am hopeful to recruit and provide counselling to them in a time convenient to participate in the NIDDM counselling project". She would have liked there to have been extra time for the participants of the training program to have met to summarise what was learned. She said that it would have been a good idea if the trainers in the afternoon session couldwatch how pharmacists counsel with the style that they acquired through the years.

Second visit: August 1997

This year, according to her, had not been good since there were a lot of events happening in the family. She said that the training in communication skills came handy at these times. She had been giving NIDDM patients some brochures on nutrition and diet. She also mentioned that one patient wanted her to provide NIDDM counselling but she had to be visited at home.

Third visit: October 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"Most of the time, I'm busy because I'm mainly responsible for the medications for three nursing homes and it is sort of a week for it...Monday, I have to go to X home providing medications and getting the orders, then I come back in the afternoon and send out anything that's necessary...I have to do over-the counter scripts. Tuesday, doing those orders for 110 residents and we pack all week

through a card system and that seems to take all Tuesday. Wednesday, I spent the time in Y home, Thursday, we go down to Z home and the afternoon is for preparing the orders for them and on Friday, it is a tidying up day...I'm sort of putting though prescriptions...it is time-consuming for the pharmacist"

2. Counselling role of a pharmacist

"I think, it is very important...unfortunately, sometimes, we do not have enough time to do it as we want to...it is actually important when medicines are initiated especially with NIDDM and asthma...they [patients] actually did not know how to use their tablets"

3. Feedback about counselling

"Thank you and sometimes sort of 'yes, I know that' and it makes you feel that you're doing a good job...if they do not want any advice, it is a bit sad "

4. Barriers to NIDDM counselling in the last 6 months

- "I suppose time"
- "Sometimes the language problem is true and a lot of our customers have not got a good background of English and I find that you do not want to intrude too much because some of them are very defensive and that's been a barrier"
- "There was an obese lady whom I want to talk to about diet but she said that "I could see the doctor and change the medications" and I think the one that could change things is diet...that was one barrier I have not come across before"

5. Usefulness of training program

"I suppose that it has given me a lot of confidence to talk to people...about the knowledge problem, you know I feel more confident to talk about their diet, proper exercise and things...I think they like about diet mostly...it has been really good taking it [psychology aspect] on board, not just with diabetes but even with losing weight"

6. Training program improvement

"You've covered a lot...more time for the video, maybe too much of the communication lecture."

Case Study 5

Personal Profile

Code name	HEATH
Age	45 y/o
Gender	Female
Years in Practice	22 years
Position	Locum
Average working hours per week	20 to 30 hours
Average number of prescriptions dispensed per day	very variable

Description of Pharmacy:

- She worked in several pharmacies in the city and in the suburbs
- She was a substitute pharmacist for those who take a leave or holiday
- The pharmacist was not familiar with most of the pharmacy customers

First visit:

On holiday

Second visit: August 1997

She had recruited one patient for the counselling project. She made the same offer to some other patients but many were not receptive to the idea of participating. She said that maybe people were afraid to be individually documented about their health. She thought that a tally card could help.

Third visit: November 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"It depends on what pharmacy I'm working in...my regular S pharmacy job, I'm always busy...also I do some work at C pharmacy...it is a much better place to do counselling and M pharmacy, too...the one in the suburb is much more difficult...my average [time] in a pharmacy is 1-2 days running...I do [work] people on holidays for a week and sometimes when people are sick"

2. Counselling role of a pharmacist

"Generally people do see us as an expert on their medication. Counselling people is not difficult but they expect that when they've got any question, you'll be able to answer it...but it is a matter of sometimes when you do need to speak to people. they do not want to discuss about the medication...what you really do is sow a seed"

3. Feedback about counselling

"...mostly positive, next time people speak to you, that is encouraging and if you can answer their questions, they're usually quite grateful...there are people who are very grumpy and it would not matter how you approach them...they are difficult to get to one side, there are a few in fact, unfortunately"

4. Barriers to NIDDM counselling in the last 6 months

- "Some people, I think, do not really want to accept that they have diabetes and they do not want to talk about it, they take their medications and try to forget all about it...it is not a part of their life...and these people are difficult to draw out"

- "Language is a problem, yesterday one had English which is not very good, very difficult"

- "If you got a stack of prescriptions waiting, you just do not feel that you can spare the time on one occasion, unfortunately...it is probably easier if you have someone in the pharmacy to do the scripts even if you're on your own...I guess it is the way the pharmacy was set up"

- "Also if you work at different places, it is hard to know whether they [pharmacies] are capable of doing it as well...when working as a reliever, you can work in a pharmacy where you've never worked before and it is quite distressing...learning the suburb, different computers...different cash registers and sort of things"

5. Usefulness of training program

"I certainly feel a lot more confident to talk to people and it was something I did not really know about...I say that I've learned from the patient as well in talking to them...you find out things you did not think about when you're just doing the theory...it has been quite helpful that way...the tally card was good but I do not always have it with me and I'm trying to remember whom I've spoken to and what I've spoken - I'm not very good at keeping records at all...and also when you're working, I mean you do the work that you have to do...that comes first, the documentation will have to when I'm not doing anything else"

6. Training program improvement

"It would have been better if we'd had a bit more hands on the blood glucose monitoring thing and also of the devices that diabetics used and it is so very easy to see these things and often, if you have not used it yourself, often you do not appreciate it especially with older people, if you have not used the equipment, you find it hard to empathise...the dietitian is very good"

Case Study 6

Personal Profile

Code name	SASSAFRAS
Age	52 y/o
Gender	Male
Years in Practice	24 years
Position	Manager
Average working hours per week	55-60 hours
Average number of prescriptions dispensed per day	90

Description of Pharmacy:

- He had two assistants in the pharmacy
- It was a city pharmacy with a branch in another suburb and he divided his time between the two pharmacies

First visit: June 1997

He said that he had given copies of informed consent to three people already but those three did not send the forms to the School of Pharmacy. He mentioned about a NIDDM patient to whom he offered counselling. The customer asked him instead what he wanted to know about the diabetes. The person appeared to be very knowledgable about diabetes and he even discussed the latest drug treatment with him. In his opinion, continuity of care for patients is good if the pharmacist is full-time. He lacked full-time pharmacists in his pharmacy. Time constraint and expectations of patients interfere with his provision of counselling.

Second visit:

On holiday

Third visit: October 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"...average of 90 scripts per day...book work, statistics, invoices, statements and accounts...dealing with orders...unpacking ethicals and attending to drug reps and OTC reps...manage two pharmacies and their problems...I never leave work on time"

2. Counselling role of a pharmacist

"an essential part of initial medication of a patient...and often doctors have little to explain to patients regarding their medications...sometimes they [repeat patients] already know and they do not want to know and are not interested"

3. Feedback about counselling

"Sometimes the patient comes with positive feedback which makes you feel worthwhile and feel good...a sense of achievement...very rarely will you get a negative feedback...sometimes when patients refuse counselling because they already have been counselled...they do not want your advice...in a hurry"

4. Barriers to NIDDM counselling in the last 6 months

- "Time is always a barrier , often you're busy with prescriptions filed up and you feel you like to spend more time with a patient but others are waiting and others do not see it as a necessity because they're jumping up and down and want to get their prescription and be away...I try to place as much information on the label as possible...you can solve it with more staff...is a cost factor unless the person is so conscious of the fact...it is a chicken and egg situation...let's face it, we're the only health providers who give our advice for free...unless we get some remuneration from it...it is self-satisfying but financially, we can only do so much"

- "Space for privacy is a problem within the pharmacy"

5. Usefulness of training program

"It certainly made me more aware of the NIDDM patient's program as to the more deeper understanding of the problem...I knew it was there...it is all put together into one and I was certainly made more aware and I think somewhere down the track there could be a revision of the same program and bringing up-to-date and not in detail at the clinical level but in the counselling level"

6. Training program improvement

"I honestly think that the training program is a 'super'."

Case Study 7

Personal Profile

Code name	SCOPARIA
Age	44 y/o
Gender	Female
Years in Practice	20 years
Position	Government Community
Average working hours per week	Health Pharmacist
Average number of prescriptions dispensed per day	30 hours not applicable

Description of Work:

- She worked in a government office
- She coordinated with other health professionals, the implementation of community health projects
- She worked with drug-related aspects of community health such as methadoneneedleexchange
- She was also involved with continuing education programs for community pharmacists

First visit: June 1997

She dropped by the School of Pharmacy to submit the evaluation forms. She talked about the usefulness of continuing education to pharmacists considering the many drug-related problems in the community.

Second visit: September 1997

She finds it really difficult to recruit patients into the project. However, she said that she has use for the communication skills in dealing with different people in her capacity as a community health pharmacist. They had a community health display at Glenorchy and she talked on aspects of diabetes and all the cards that she prepared about diabetes were taken by people who attended. However, she found that such intervention was hard to measure.

Researcher's comments:

Scoparia cannot be evaluated in the same manner as the other pharmacists because of the nature of her job. One reason why she decided to become a participant is to increase her knowledge of NIDDM which she could use in her own educational programs for the community and for the pharmacists.

Third visit: November 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"It is quite different, it is here (office) or going to meetings or only trying to make a pharmacy document or answering questions or writing some stuff a bit about what you've read...it is just quite varied...multidisciplinary and primary health care"

2. Counselling role of a pharmacist

"It is important but I wonder how many pharmacists are quite active in doing it. There is not any pharmacy set-up in Tasmania with private counselling that I know of...for counselling people in a pharmacy...it is small facts, small chunks, not counselling in isolation...it is quite difficult to change those things...I think there's quite a lot of work to be done"

3. Feedback about counselling

"It is only evaluation and it is mainly positive...feel good about it...with negative feedback...people say about what I've heard before and it is not new"

4. Barriers to NIDDM counselling in the last 6 months

- "Not so many barriers but it is the promotion of what I can do...there's a couple of nurses who will be having a project on diabetes and they do not actually have a pharmacist...how? they do not have one...but then since they are actually arranging it, I got week three. Again that very much depends on the doctor"

5. Usefulness of training program

"The counselling side of it, bits of it were already there...probably indirectly behind it...and as far as the counselling, I've known that and I've done 3 main ones - talking to workers about diabetes, older people because they suffer from complications and diabetes and drugs and I guess the other way I've applied it is anywhere I've been, it is about the concept of learning about the disease and its different aspects and one of it is on drugs...to learn about the disease gives the pharmacist more credibility and because of the combination, they think that medications is a small part and the truth, they're really do not know what they're doing"

6. Training program improvement

"I know, it is quite hard for the counselling bit just having it for three sessions and I'm not quite sure how you can actually squash it...I do not think, it can, because I know how much has to be put into it...other than that, I did not realise there is one major change to be done...and the program, it is really nice because that's the sort of stuff I really want to have...I make use of this and that, in effect, it will be more of a trainers' training...it is really good."

Case Study 8

Personal Profile

Code name	IRIS
Age	49 y/o
Gender	Female
Years in Practice	24 years
Position	Locum
Average working hours per week	35 hours
Average number of prescriptions dispensed per day	50 - 200

Description of Pharmacy:

- She worked in two pharmacies in the south of the state
- One was a small town pharmacy and the other a pharmacy in a bigger town
- The pharmacist was familiar with the people in the neighbourhood

First visit:

It was through a telephone conversation that she mentioned the difficulty of recruiting patients. This was mainly because she could not make appointments with the patients as she worked at different times at the pharmacy as a locum.

Second visit: September 1997

She came to the School of Pharmacy. She still was not able to recruit patients. She might try using the tally card instead of the items in the NIDDM patient counselling kit which she was not able to use.

Researcher's comments:
Iris was the only pharmacist who worked in the rural area among the participants.

Third visit: January 1998

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"It varies...in the mornings, it gets busy, you get there at 9 am and I'm talking of H pharmacy, often there are people waiting on the doorstep and we have a few methadone patients waiting on the doorstep...that could be really stressful...these days, people do not want to wait anytime...they're always in a hurry...when they have to wait more than 10 minutes, they got a bit agitated...that is difficult...I have a very good dispensing assistant there which is very helpful...which takes the pressure off...more time to talk to people if they want to...so often we're very busy first day hour and then it quiets down especially in summer when it is hot...then again it becomes very busy over lunchtime...then a bit of a lull...between

3 to 4 pm, there's always things to do and you catch up with the paperwork...It has become more busy now than what it used to be...I think there are more doctors in the area and more people coming in to town, the banks are closed and people tend to go to that bigger centre in Town H"

2. Counselling role of a pharmacist

"I think it is an important role...I think it is hard sometimes to find the time to give people as much attention as they'd like especially when it is a busy dispensary and you've got people waiting for their prescriptions...You only have 2 minutes to talk to them and you often need much more...it is the classical one-minute counselling...the usual thing for pharmacist then you feel that you should have given them more time and you have not answered their queries...you hope you can get back to them but that's not possible either...that's a bit of difficult and so try and do the best you can"

3. Feedback about counselling

"Pretty good especially with NIDDMs, they'd often come back and tell me how they'd gone with their medication and how it has altered their glucose levels and how pleased they are...I just have to take that [positive feedback]...it makes you feel that you're doing something worthwhile...that you can help them understand what their conditions are and point them to the right direction and look after their bodies better...about negative feedback, I have some but that's always an indirect feedback...they do not always come to you...they often say to one of the staff or the other pharmacy...but not to worry"

4. Barriers to NIDDM counselling in the last 6 months

- "I find it difficult for people to commit themselves to that [structured counselling], they take the pamphlets away and you would not see them again...I think they're a bit shy, a bit embarrassed that they're NIDDM patients, they do not want to tell everybody about those things"

- "I think the problem was that I was a locum and working at different places at that time...I only see them on an irregular basis...must be easier if you're working at the same pharmacy all the time...the same patients you can see them a bit better...disjointedness in being in different locations...having different patients all the time"

- Language is a barrier making yourself be understood and for them as well...putting the questions they want to ask and whether they will be understood"

5. Usefulness of training program

"I think I've become much more aware of the whole treatment of a diabetic...when you see what drugs a patient has, what the doctors do and several types to decrease blood sugar...now I understand it better...you're keen to follow certain checking on the patients...It also makes it easier to follow other things like the eye damage, foot problems...I just think that I'm much more aware of the total involvement of body in diabetes and it is just to look out for that sort of thing in the patients that you meet...it makes you more informed and you can give much more advice when you understood it...makes you much more confident when you know what you're talking about...you know whom to refer them to when they need help about things...I do think it is very valuable even if something about it is rusty or basic...counselling skills...I've done that in the past with children...not always easy to apply that knowledge because it is not a perfect world and it always

worries me a lot depending on what time you've got and what mood your patient was in...a lot of variants there...I think it depends a lot also on your personality whether you're a chatty person or not makes a lot of difference really how you go about it"

6. Training program improvement

"...yes, the people you had talking [resource persons] were very helpful, a refresher course is probably a good idea...yes, it is a total thing, not just a course...I like the GP part and I would have repeated it 3x over a course of a couple of weeks."

Case Study 9

Personal Profile

Code name	HIBERTIA
Age	44 y/o
Gender	Female
Years in Practice	22 years
Position	Locum
Average working hours per Week	38 hours
Average number of prescriptions dispensed per day	250 -300

Description of Pharmacy:

- She worked in four pharmacies
- Three of the pharmacies in the city and one in a suburb

First visit:

On holiday

Second visit: August 1997

She mentioned the different patients' cases she encountered. Many of those to whom she offered additional information help did not accept her help. One young, newly-diagnosed NIDDM patient seemed to be confused. She asked her to call her up in case she would like additional help but there was no response. She also found that the language barrier was a problem with some customers and she was not able to say much. Sometimes, a carer or a relative comes in to collect the script and there was no chance to explain to the patient. She will try using the tally card and put it in her bag wherever she worked. She said there is no need for reminder labels.

Third visit: October 1997

Excerpts from audio-taped interview:

1. Work, in terms of being 'busy'

"Three out of four pharmacies I would describe as very hectic...where it is often difficult to give out instructions because of the pressure of the scripts waiting...I find it a frustration...you're constantly on the 'go'."

2. Counselling role of a pharmacist

"...very important role...I do not think doctors have spent more time talking to their patients about drugs and possible side effects, about dose, how long it is gonna take to work, things that should be discussed when we give out a prescription to a patient...at the same time, it is not possible to go through it in such detail"

3. Feedback about counselling

"In here [least busy pharmacy], we actually get good feedback because we prescribe herbs and alternatives...because they have to come back to tell whether it worked or not...and if it worked, they come back and say how pleased they are and they want to continue - that's really good when you get positive feedback...it makes you more interested and wanting to learn more...when it did not work, it does not worry me too much, I mean everyone respond differently to medications"

4. Barriers to NIDDM counselling in the last 6 months

- "A lot of patients I've seen do not have English as their first language and there'd been communication problems...it has been difficult enough to establish who is taking the medicine to start with, often female and male are on medication and often they've got them intermixed...it has to be sorted out...that all I can do is to get the information...they just do not understand...I find it very frustrating...obviously they send children who speak better English...but we cannot give them the whole information for them to be able to comprehend the importance of it"

- "Time restraint...I'd love to sit down with every NIDDM patient and go through this [the kit] to give them all the info, but you cannot just do that...if I counsel them and they really want to know, I would put time aside just for them to get the information, so far, I have not come across one who is that motivated...time restraint can be solved if you can find someone who can do the work which means more expense"

- "People do not want to know the information...one person who's newly-diagnosed was very upset and just wanted not to talk about it...another man who's newly-diagnosed, appeared to be more controlled and that his blood glucose is good and he thought that it is all there is and that is the end of the story, full stop"

5. Usefulness of training program

"It has motivated me to learn more about NIDDM myself which I think is excellent...my knowledge base is not very good, I suppose I did not put much thought about it until I took the course in a disease state...I really did not look into it too much but now I'm certainly well informed...which makes me feel more confident on the imparting of advice...I think I'm certainly trying to get more information across to patients...eventhough it is more difficult, I'll still continue to do that...try to do that...even if that would not change...it also made me think how frustrating it can be...I mean when you are well-informed, you have all the information you ever wanted...what's my role if I cannot give them this information...I found it frustrating... there are certain types of people and you cannot just change...time...you just have to wait and maybe eventually they would want to know more information and I'll be there for them "

6. Training program improvement

"No, I really think that, that program was excellent...I was quite impressed with it... would like to have this done for other disease states and it would be a good idea to just increase your knowledge and just familiarise yourself with the problem...I think, it would be great...I love the counselling side"

Case Study 10

Personal Profile

Code name	WATTLE
Age	37 y/o
Gender	Male
Years in Practice	13 years
Position	Owner/manager
Average working hours per week	50 hours
Average number of prescriptions dispensed per day	130

Description of Pharmacy:

- He had two to three, sometimes 4 to assistants depending on the time and day and once a week locum
- It was a city pharmacy close to both doctor's surgery and a health centre
- The pharmacist was familiar with the people in the neighbourhood

First visit: June 1997

Wattle tended to forget his involvement with NIDDM counselling, not that he did not want to counsel these patients but he tended to forget the documentation aspect of his counselling. He had an idea in mind to remedy this, and that was to use stickers on shelves next to the anti-diabetic medications to remind him about it. He had used about 5 information needs checklists with his patients and was able to provide counselling based on the aspects of information they specified. However, he was not able to involve them in having a NIDDM patient diary. One person to whom he had given a NIDDM information checklist just ticked the need for information on blood glucose monitoring. He did advise the person about the features of the available devices in the pharmacy and also advised him to procure one from the Repatriation hospital if a cheaper device was desired. The person did follow his advice and bought from the hospital.

Second visit: August 1997

He said that he incorporated certain information from the training program in his counselling such as UTI and metformin which he was not aware of previously. He still insisted on using reminder stickers. He was not able to recruit any patient for the counselling project but was still doing his counselling.

Researcher's Comments:

In addition to the hiring of a pharmacist to assist him, Wattle also alloted a corner in his pharmacy for semi-private counselling complete with a computer, some references and various information materials.

Third visit: November 1997

Excerpt from audio-taped interview:

1. Work, in terms of being 'busy'

"It is very busy, we do not have enough time to probably counsel the public adequately...that's part of it and it sucks to us...it is different in a position to a shopping centre where patients leave their prescriptions and they come back and we're next to a medical centre and people tend to wait for their scripts so we end up having 5 to 6 people in the pharmacy at one time and that makes it different to be able to sit down and counsel properly with them...in terms of being difficult, our pharmacy is in a different situation to a shopping centre and maybe other community pharmacies are in a different situation again but we think we're very busy and probably much overworked and it is probably a decision to have another pharmacist in another month or so...busiest days are Mondays, Tuesdays and Fridays and also busy Saturday morning...have a locum once a week but with a second pharmacist, I would not do that...we'll end up taking one day off each week"

2. Counselling role of a pharmacist

"...very good at giving pamphlets and information about counselling but we do not ask questions...we're very good at explaining how medications work or what problems to anticipate without having to find out whether the patient is coping well with the medications...it is more like we're good in giving info but do not ask questions... role is pharmaceutical care where the pharmacist has a private area ...where I can sit down and talk to the patient and ask questions and the patient can ask questions in a relaxed atmosphere...it is very hard to ask patients to ask questions when another person is waiting for the script as well...it just does not happen and we've got to be more open and the trend is that the pharmacist is becoming much more involved in managing medications for patients rather than trying to sustain their profitability by selling nappies or that sort of thing so much"

3. Feedback about counselling

"It is really positive... I think, it is the most interesting part of pharmacy, otherwise we would not keep doing it...just typing the labels and sticking them on bottles...they [patients] keep coming back...that's really it and I guess, it is just being open and being able to talk to them...I think that things like white coats and raised dispensaries...I think we should be able to get out and get pretty close to the patients and even having a bench bet you makes it hard for me to do it...but one other thing lacking especially with OTC counselling is that we forget to ask people to come back or to let us know how it goes and it is hard if you do not know if they have problems with things...they just do not come back, they just come to another pharmacy if they do not get any result and then the pharmacist does not know whether they're doing something good or appalling...it seems that you have to move up to a higher level like that of a GP...they could actually feel that they should come back and see you...That's quite hard to develop that but it is important...negative feedback...not often...I'm surprised that patients do not give that where they probably should"

4. Barriers to NIDDM counselling in the last 6 months

- "Probably the time and also trying to put into practice what we have learned in the course, it is actually the hardest thing...if you can continue doing it, it does help"

- "Another main problem is because most of these patients were patients that have been treated for long period of time, that it is very hard to convince them to actually put any new knowledge to them...probably the most opportune period is when they are actually initiated on a therapy rather than those who are currently on treatment"

5. Usefulness of training program

"I think probably with counselling, I sort of picked up the parts of that section and used it in practice...it is just probably things I've been doing any way but I'm more aware I'm doing it...and I think mainly the recounting of points when you actually go through things you did not summarise it a bit more and even written notes that I have not in the past written down...I think, I'll be more aware of things as I go...the other thing was...in the pharmacology...I picked up a little bit there as well with metformin, I've counselled patients about UTI and I've noticed that that was part of the drug therapy lecture and that's been quite useful...I think that one of our patients could have ended up in the hospital and he was with a UTI but I spoke to the GP about it and it probably has aborted that particular problem...I know that I have not saved a life but it is very close to it"

6. Training program improvement

"I think it [program] was really useful...good and intense...I think, it is the difficulty with time...a lot of pharmacists might find it hard to devote 3 to 4 whole days to a course and I do not know whether there are suggestions how you can actually improve it...maybe to have it offshore...do something like that on a cruise ship and maybe more people can attend."